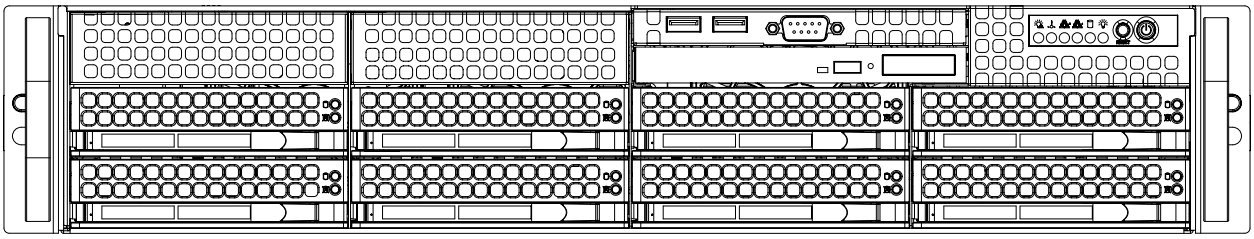
SuperServer®
6029P-TR(T)



USER'S MANUAL

Revision 1.0

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Preface

About this Manual

This manual is written for professional system integrators and PC technicians. It provides information for the installation and use of the SuperServer 6029P-TR(T). Installation and maintenance should be performed by experienced technicians only.

Please refer to the 6029P-TR(T) server specifications page on our website for updates on supported memory, processors and operating systems (http://www.supermicro.com).

Notes

For your system to work properly, please follow the links below to download all necessary drivers/utilities and the user's manual for your server.

- Supermicro product manuals: http://www.supermicro.com/support/manuals/
- Product drivers and utilities: ftp://ftp.supermicro.com
- Product safety info: http://www.supermicro.com/about/policies/safety_information.cfm

If you have any questions, please contact our support team at:
support@supermicro.com

This manual may be periodically updated without notice. Please check the Supermicro website for possible updates to the manual revision level.

Warnings

Special attention should be given to the following symbols used in this manual.



Warning! Indicates important information given to prevent equipment/property damage or personal injury.



Warning! Indicates high voltage may be encountered when performing a procedure.

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Chapter 1

Introduction

1.1 Overview

The SuperServer 6029P-TR(T) is an all-purpose server system in the SC825TS-R1K03LPB chassis, using an X11DPi-N(T) motherboard for memory, CPU, storage, or network intensive applications. It will serve well in data centers, government labs, or business enterprises, for cloud and virtualization, simulation, automation, hosting and storage.

The server offers two network ports:

- The 6029P-TR model supports 1 Gbps.
- The 6029P-TRT model supports 10 Gbps.

In addition to the motherboard and chassis, several included parts are listed below.

Main Parts List		
Description	**Part Number**	**Quantity**
Power supply modules	PWS-1K03A-1R	2
Backplane	BPN-SAS3-825TQ	1
Fans	FAN-0181L4	3
CPU passisve heatsink	SNK-P0068PS SNK-P0068PSC	1 each
Air flow shroud	MCP-310-29001-0N	1
USB/COM port tray	MCP-220-00007-01	1
Rail kit	MCP-290-00053-0N	1 set

1.2 Unpacking the System

Inspect the box in which the server was shipped and note if it was damaged. If any equipment appears damaged, file a damage claim with the carrier who delivered it.

1.3 System Features

The following table provides an overview of the main features of the 6029P-TR(T) server. Refer to Appendix C for additional specifications.

System Features
Motherboard
X11DPi-N(T)
Chassis
SC825TS-R1K03LPB
CPU
Supports dual Intel 81xx/61xx/51xx/41xx/31xx series (Socket P0) processors which offer Intel UltraPath Interconnect (UPI) of up to 10.4 GT/s
Memory
Supports up to 2 TB of Load Reduced DIMM (LRDIMM), 3D LRDIMM, Non-Volatile DIMM (NV-DIMM) DDR4 (288-pin) ECC 2666/2400/2133 MHz modules in 16 slots; up to 256 GB size
Chipset
Intel C621 PCH
Expansion Slots
Six PCIe 3.0 low profile slots: four x16 and two x8
Input/Output
Network: Two LAN ports--6029P-TR model 1 Gbps, or 6029P-TRT model 10 Gbps IPMI: One dedicated LAN port USB: Two USB 3.0 ports, two USB 2.0 port, additional ports optional COM: One VGA: One Optional addtional drives and I/O ports available as kits
Storage Drives
Up to eight hot-swap 3.5" SATA3 drives, or optionally, 2.5" drives with converter (*Optional*) Up to two fixed internal drives, SATA, SAS or NVMe
Power
Dual 800/1000 W modules, 80 Plus Titanium level
Cooling
Three 8-cm 11K RPM, 4-pin PWM mid-chassis fans; one airflow shroud, two CPU heatsinks
Form Factor
2U rackmount; dimensions (WxHxD) 16.8 x 3.5 x 25.5 in. (427 x 89 x 648 mm)

1.4 Chassis Features

Control Panel

The chassis front features a control panel to monitor node function and control power.

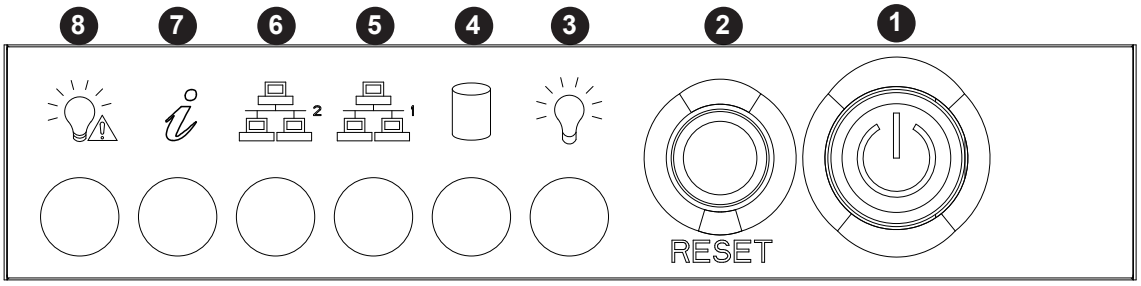


Figure 1-1. Control Panel

Control Panel Features		
Item	**Features**	**Description**
1	Power button	The main power switch applies or removes primary power from the power supply to the server but maintains standby power. To perform most maintenance tasks, unplug the system to remove all power..
2	Reset button	Reboots the system.
3	Power LED	Indicates power is being supplied to the system power supply units. This LED is illuminated when the system is operating normally.
4	HDD LED	Indicates hard disk drive activity.
5	NIC LED	Indicates network activity on LAN1 when flashing.
6	NIC LED	Indicates network activity on LAN2 when flashing.
7	Information LED	Alerts operator to several states, as noted in the table below.
8	Power Fail LED	Indicates a power supply module has failed.

Information Indicator	
LED Appearance	**Description**
Solid Green	The node is powered on and operating normally
Blinking Green	The node is in the process of shutting down
Solid Red	The node is detecting an overheated condition
1Hz Blinking Red	The node is detecting a fan failure
.25Hz Blinking Red	The node is detecting a power failure
Solid Blue	The node local UID is on
1Hz Blinking Blue	The node remote UID is on
No Illumination	The node is powered-down

Front Features

The front of the chassis includes eight hot-swap drive bays and the chassis control panel.

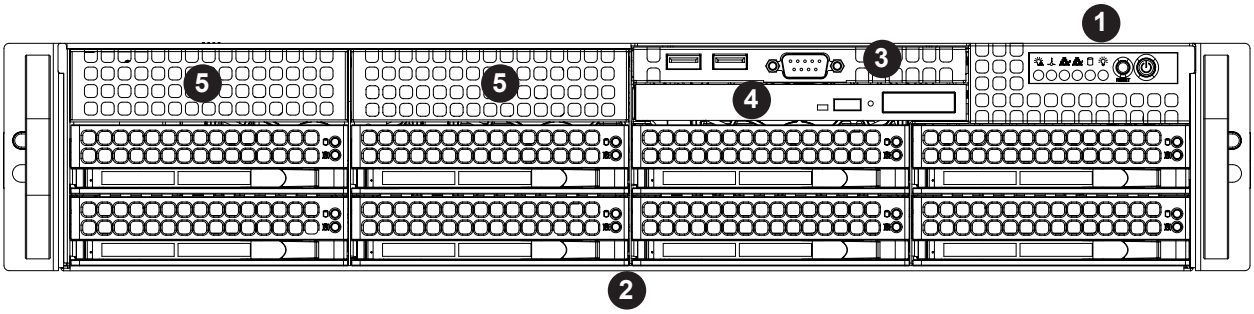


Figure 1-2. Chassis Front View

Front Chassis Features		
Item	**Feature**	**Description**
1	Control Panel	Described in previous section
2	Drives	Eight 3.5" hot-swap storage drive bays
3	I/O panel	Two USB ports and one COM port
4	DVD drive bay	Bay for an optional slim DVD drive
5	Bays for optional drive	Two bays for fixed internal drives (with optional SAS RAID controller)

Rear Features

The illustration below shows the features on the rear of the chassis.

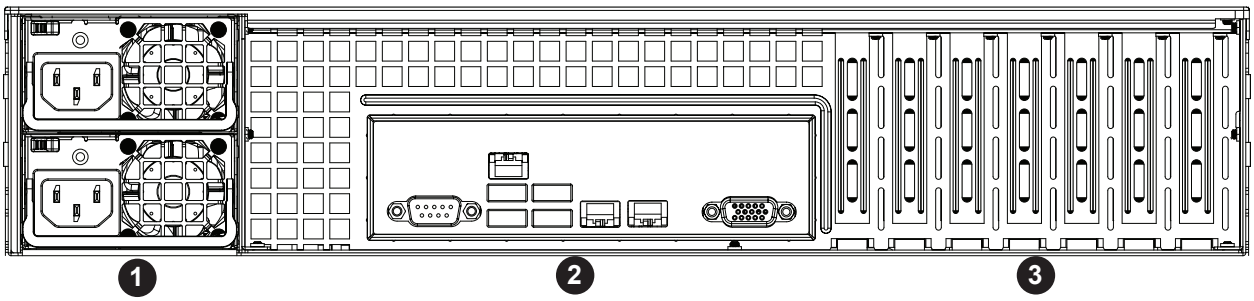


Figure 1-3. Chassis Rear View

Rear Chassis Features		
Item	**Feature**	**Description**
1	Power Supplies	Redundant power supply modules
2	I/O Panel	Input/Output ports described in Chapter 4
3	PCI Slots	Six usable slots for expansion cards

1.5 Motherboard Layout

Below is a layout of the X11DPi-N(T) with jumper, connector and LED locations shown. See the table on the following page for descriptions. For detailed descriptions, pinout information and jumper settings, refer to Chapter 4.

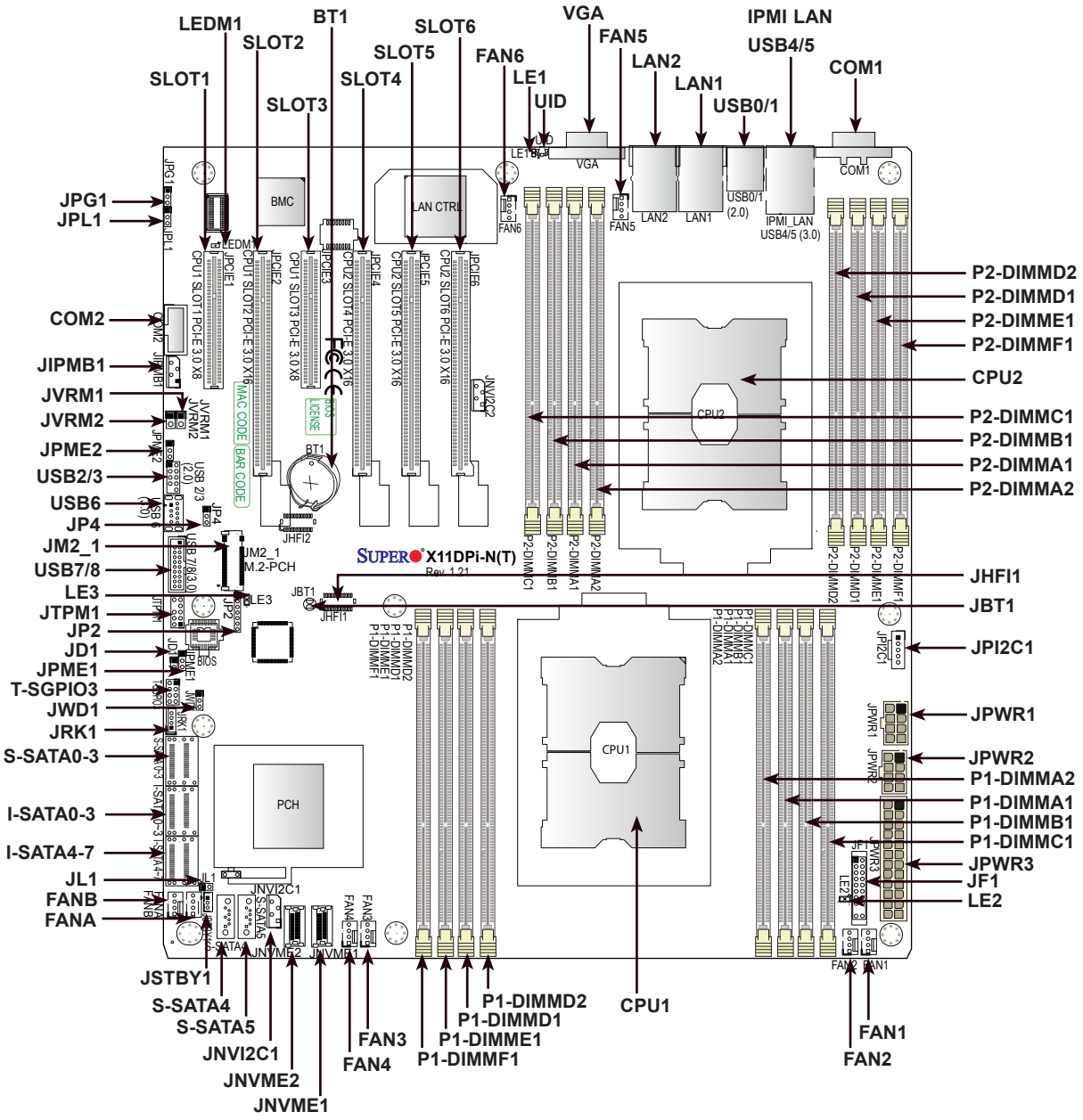


Figure 1-4. Motherboard Layout

Notes:

- "■" indicates the location of pin 1.
- Jumpers/LED indicators not indicated are used for testing only.

Motherboard Jumpers, Connectors, and LEDs

Jumper	Description	Default Setting
JBT1	CMOS Clear	Open (Normal)
JPG1	Audio Enable	Pins 1-2 (Enabled)
JPL1	LAN1/LAN2 Enable	Pins 1-2 (Enabled)
JPME1	ME Recovery	Pins 1-2 (Normal)
JPME2	Manufacturing Mode Select	Pins 1-2 (Normal)
JVRM1/ JVRM2	VRM SMB Clock (to BMC or PCH)	Pins 1-2 (BMC, Normal)
JWD1	Watch Dog Timer Enable	Pins 1-2 (Reset to System)

Connector	Description
BT1	Onboard CMOS battery socket
COM1/COM2	Back panel COM port/COM header for front access
FAN1-6, FANA/FANB	System cooling fan headers (FAN1-FAN6, FAN A, FAN B)
IPMI_LAN	Dedicated IPMI_LAN port
I-SATA0~3, I-SATA4~7	SATA 3.0 iPass header supported by the Intel PCH
JD1	Power LED header
JF1	Front Panel Control header
JHFI1/JHFI2	Host Fabric Interface (HFI) sideband connection headers used for the HFI carrier cards (when the SKX-F processors are used.) (JHFI1: for CPU1, JHFI2: for CPU2).
JIPMB1	4-pin BMC External I²C header (for an IPMI-supported card)
JL1	Chassis Intrusion header
JM2_1	PCIe M.2 slot
JNVI²C1	NVMe I²C header
JNVME1	NVMe Slot1
JNVME2	NVMe Slot2
JPI²C1	Power Supply SMBbus I²C header
JPWR1/JPWR2	8-pin Power Supply connectors
JPWR3	24-pin ATX main power supply connector
JRK1	RAID Key for onboard SATA devices
JSTBY1	Standby power header
JTPM1	Trusted Platform Module (TPM)/Port 80 connector
LAN1/LAN2	Gigabit LAN/10G LAN Ethernet Ports on the IO back panel (10G LAN ports on X11DPi-NTX11DPi-N(T) only)
S-SATA0-3	S-SATA 3.0 iPass header supported by the Intel SCU
S-SATA4/S-SATA5	S-SATA Ports with built-in power pins and with support of Supermicro SuperDOM (Disk On Module) devices
SLOT1/SLOT3	PCI-Express 3.0 X8 Slots supported by CPU1
SLOT2	PCI-Express 3.0 X16 Slot supported by CPU1
SLOT4/SLOT5/SLOT6	PCI-Express 3.0 X16 Slots supported by CPU2
T-SGPIO3	General Purpose Serial I/O Port
UID	Unit Identifier (UID) Switch

Connector	Description
USB0/1	Back panel USB 2.0 Ports
USB2/3	Front Accessible USB 2.0 Header
USB4/5	Back panel USB 3.0 Ports
USB6	Type A USB 3.0 Header
USB7/8	Front Accessible USB 3.0 Header
VGA	VGA Port

LED	Description	State: Status
LE1	UID (Unit Identifier) LED	Solid Blue: Unit identified
LE2	Onboard Power LED	On: Onboard power on
LEDM1	BMC Heartbeat LED	Blinking Green: BMC normal

System Block Diagram

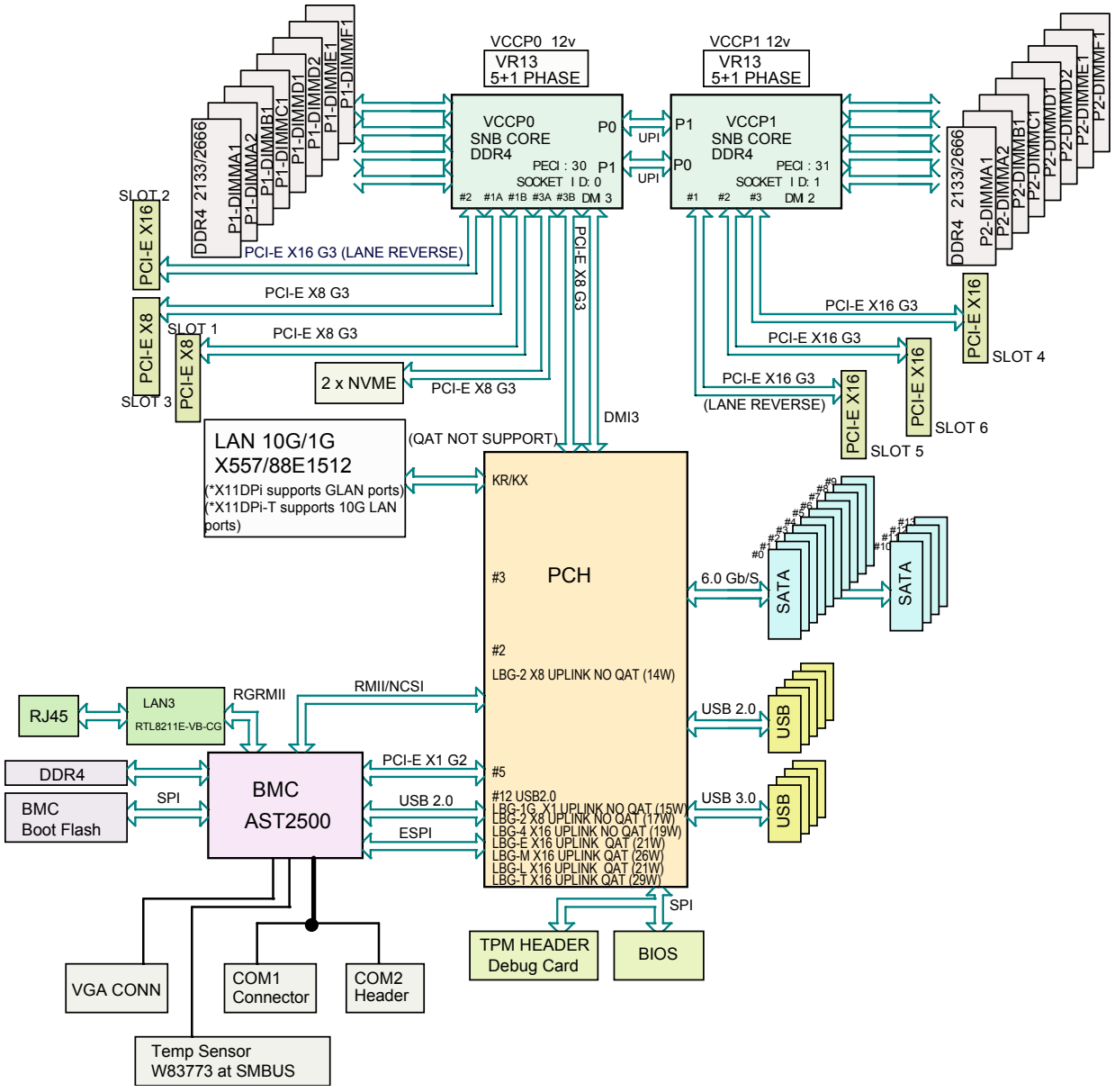


Figure 1-5. Intel C621 PCH Chipset: System Block Diagram

Note: This is a general block diagram and may not exactly represent the features on your motherboard. See the System Specifications appendix for the actual specifications of your motherboard.

Chapter 2

Rack Installation

This chapter provides advice and instructions for mounting your system in a rack.

2.1 Preparing for Setup

The box in which the system was shipped should include the hardware needed to install it into the rack. Please read this section in its entirety before you begin the installation.

Choosing a Setup Location

- The system should be situated in a clean, dust-free area that is well ventilated. Avoid areas where heat, electrical noise and electromagnetic fields are generated.
- Leave enough clearance in front of the rack so that you can open the front door completely (~25 inches) and approximately 30 inches of clearance in the back of the rack to allow sufficient space for airflow and access when servicing.
- This product should be installed only in a Restricted Access Location (dedicated equipment rooms, service closets, etc.).
- This product is not suitable for use with visual display workplace devices acccording to §2 of the German Ordinance for Work with Visual Display Units.

Rack Precautions

- Ensure that the leveling jacks on the bottom of the rack are extended to the floor so that the full weight of the rack rests on them.
- In single rack installations, stabilizers should be attached to the rack. In multiple rack installations, the racks should be coupled together.
- Always make sure the rack is stable before extending a server or other component from the rack.
- Extend only one server or component at a time - extending two or more simultaneously may cause the rack to become unstable.

Server Precautions

- Review the electrical and general safety precautions in the appendix, "Standardized Safety Warnings" in this manual.
- Determine the placement of each component in the rack *before* you install the rails.
- Install the heaviest server components at the bottom of the rack first and then work your way up.
- Use a regulating uninterruptible power supply (UPS) to protect the server from power surges and voltage spikes and to keep your system operating in case of a power failure.
- Allow any drives and power supply modules to cool before touching them.
- When not servicing, always keep the front door of the rack and all covers/panels on the servers closed to maintain proper cooling.

Rack Mounting Considerations

Ambient Operating Temperature

If installed in a closed or multi-unit rack assembly, the ambient operating temperature of the rack environment may be greater than the room's ambient temperature. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer’s maximum rated ambient temperature (Tmra).

Airflow

Equipment should be mounted into a rack so that the amount of airflow required for safe operation is not compromised.

Mechanical Loading

Equipment should be mounted into a rack so that a hazardous condition does not arise due to uneven mechanical loading.

Circuit Overloading

Consideration should be given to the connection of the equipment to the power supply circuitry and the effect that any possible overloading of circuits might have on overcurrent protection and power supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Ground

A reliable ground must be maintained at all times. To ensure this, the rack itself should be grounded. Particular attention should be given to power supply connections other than the direct connections to the branch circuit (i.e. the use of power strips, etc.).



To prevent bodily injury when mounting or servicing this unit in a rack, you must take special precautions to ensure that the system remains stable. The following guidelines are provided to ensure your safety:

- This unit should be mounted at the bottom of the rack if it is the only unit in the rack.
- When mounting this unit in a partially filled rack, load the rack from the bottom to the top with the heaviest component at the bottom of the rack.
- If the rack is provided with stabilizing devices, install the stabilizers before mounting or servicing the unit in the rack.
- Slide rail mounted equipment is not to be used as a shelf or a work space.

2.2 Installing the Rails

This section provides information on installing the chassis into a rack unit with the rails provided. There are a variety of rack units on the market, which may mean that the assembly procedure will differ slightly from the instructions provided. You should also refer to the installation instructions that came with the rack unit you are using. **Note:** This rail will fit a rack between 28" and 33.5" deep.

Identifying the Rails

The chassis package includes two rail assemblies. Each assembly consists of three sections: An inner rail that secures directly to the chassis, an outer rail that secures to the rack, and a middle rail which extends from the outer rail. These assemblies are specifically designed for the left and right side of the chassis and labeled.

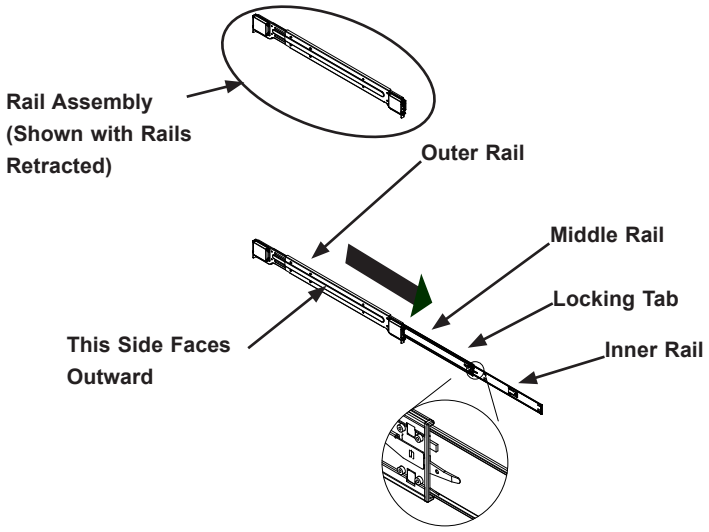


Figure 2-1. Identifying the Outer Rail, Middle Rail and Inner Rail
(Left Rail Assembly Shown)

Note: Both front chassis rails and the rack rails have a locking tab, which serves two functions. First, it locks the server into place when installed and pushed fully into the rack (its normal operating position. In addition, these tabs lock the server in place when fully extended from the rack. This prevents the server from coming completely out of the rack when pulled out for servicing.

Releasing the Inner Rail

Each inner rail has a locking latch. This latch prevents the server from coming completely out of the rack when when the chassis is pulled out for servicing.

To mount the rail onto the chassis, first release the inner rail from the outer rails.

1. Pull the inner rail out of the outer rail until it is fully extended as illustrated below.
2. Press the locking tab down to release the inner rail.
3. Pull the inner rail all the way out.

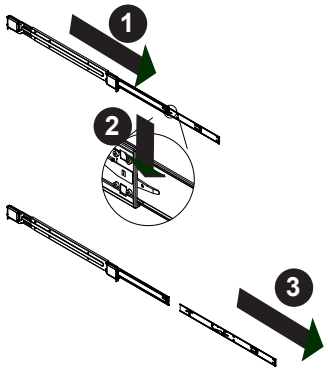


Figure 2-2. Extending and Releasing the Inner Rail

Installing the Inner Rails

Begin the rack mounting procedure by installing the inner rails to the chassis.

1. Identify the left and right inner rails. They are labeled.
2. Place the inner rail firmly against the side of the chassis, aligning the hooks on the side of the chassis with the holes in the inner rail.
3. Slide the inner rail forward toward the front of the chassis and under the hooks until the quick release bracket snaps into place, securing the rail to the chassis.
4. Optionally, you can further secure the inner rail to the chassis with a screw.

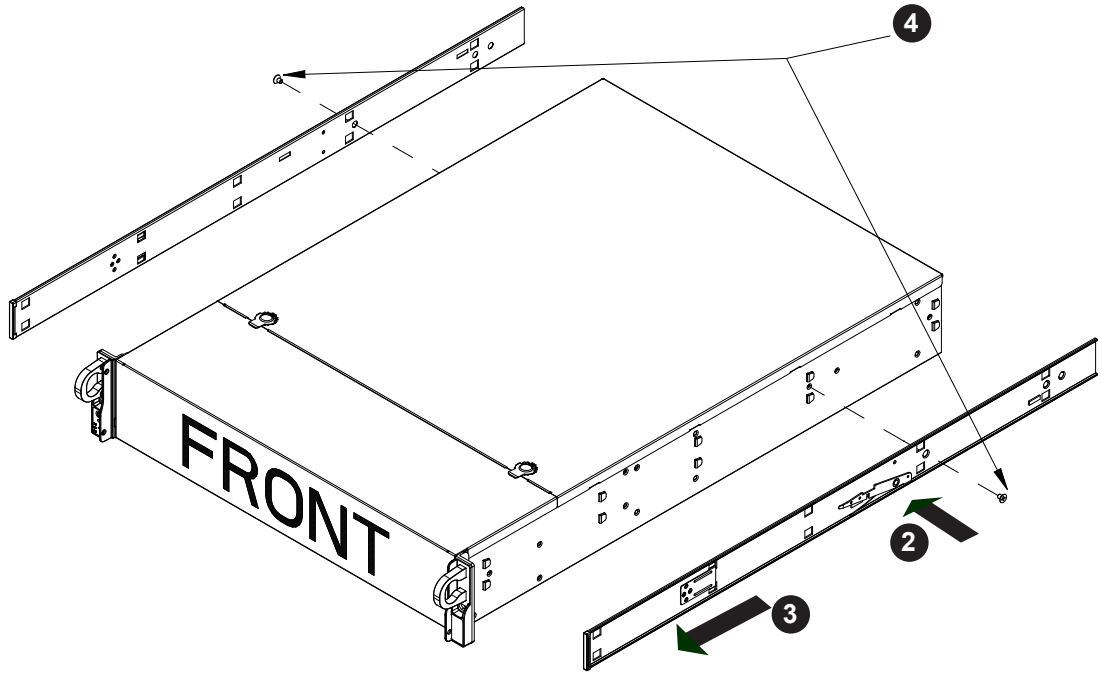


Figure 2-3. Installing the Rails

Warning: Do not pick up the server with the front handles. They are designed to pull the system from a rack only.

Installing the Outer Rails onto the Rack

1. Press upward on the locking tab at the rear end of the middle rail.
2. Push the middle rail back into the outer rail.
3. Hang the hooks on the front of the outer rail onto the square holes on the front of the rack. If desired, use screws to secure the outer rails to the rack.
4. Pull out the rear of the outer rail, adjusting the length until it just fits within the posts of the rack.
5. Hang the hooks of the rear section of the outer rail onto the square holes on the rear of the rack. Take care that the proper holes are used so the rails are level. If desired, use screws to secure the rear of the outer rail to the rear of the rack.

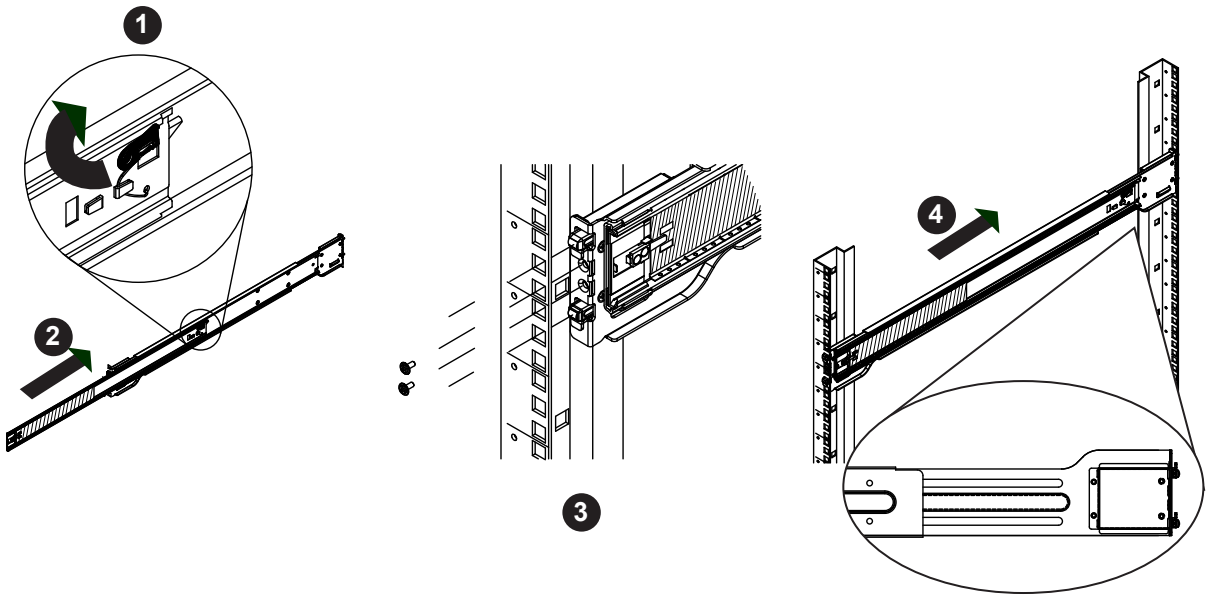


Figure 2-6. Extending and Mounting the Outer Rails

2.3 Installing the Chassis into a Rack

Once rails are attached to the chassis and the rack, you can install the server.

1. Pull the middle rail out of the front of the outer rail and make sure that the ball bearing shuttle is locked at the front of the middle rail.
2. Align the rear of the chassis rails with the middle rails and then push evenly on both sides of the chassis until it clicks into the fully extended position.
3. Depress the locking tabs on both sides of the chassis and push the it fully into the rack. The locking tabs should "click".
4. Optional screws may be used to hold the front of the chassis to the rack.

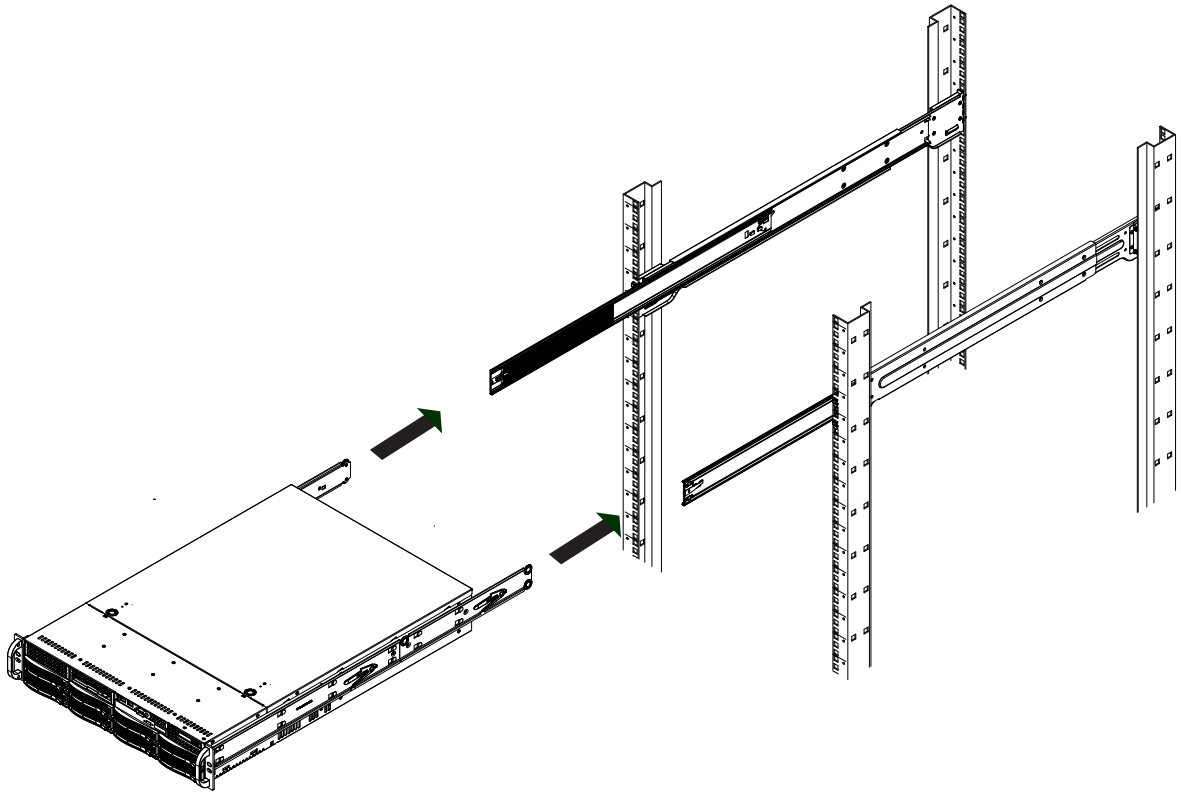


Figure 2-7. Installing the Server into the Rack

Note: Keep the ball bearing shuttle locked at the front of the middle rail during installation.

Note: Figure is for illustrative purposes only. Always install servers to the bottom of a rack first.

Removing the Chassis from the Rack

Caution! It is dangerous for a single person to off-load the heavy chassis from the rack without assistance. Be sure to have sufficient assistance supporting the chassis when removing it from the rack. Use a lift.

1. Pull the chassis forward out the front of the rack until it stops.
2. Press the release latches on each of the inner rails downward simultaneously and contiue to pull the chassis forward and out of the rack.

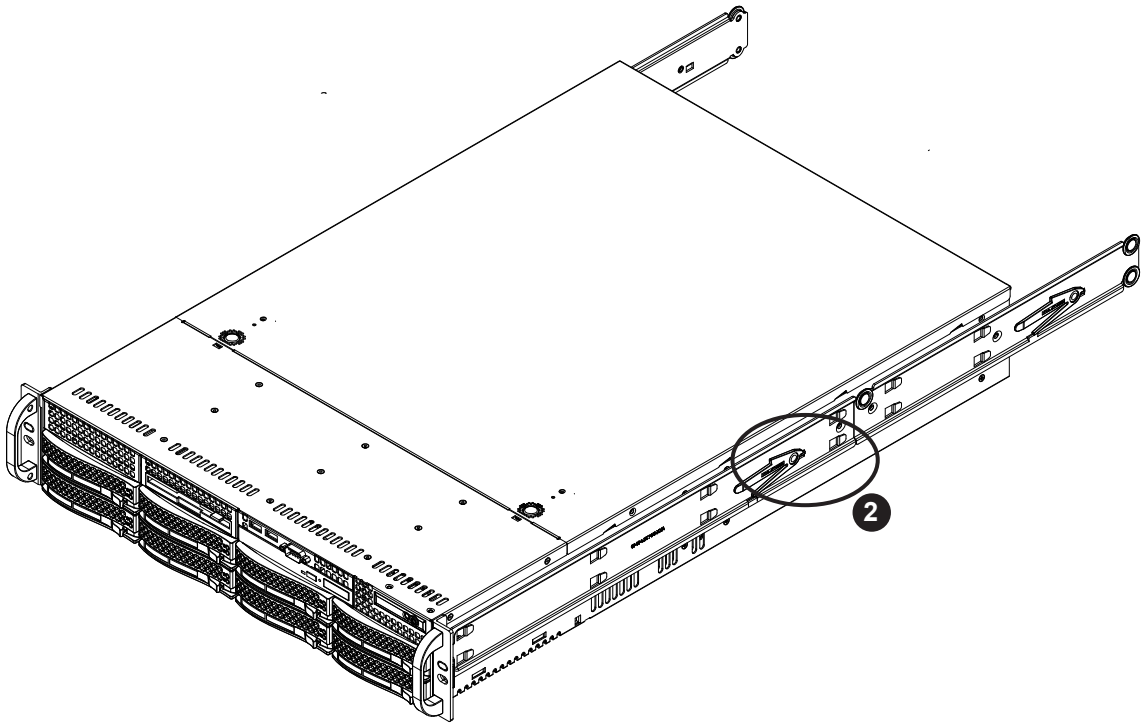


Figure 2-8. Removing the Chassis From the Rack

Chapter 3

Maintenance and Component Installation

This chapter provides instructions on installing and replacing main system components. To prevent compatibility issues, only use components that match the specifications and/or part numbers given.

Installation or replacement of most components require that power first be removed from the system. Please follow the procedures given in each section.

3.1 Removing Power

Use the following procedure to ensure that power has been removed from the system. This step is necessary when removing or installing non-hot-swap components or when replacing a non-redundant power supply.

1. Use the operating system to power down the system.
2. After the system has completely shut-down, disconnect the AC power cords from the power strip or outlet.
3. Disconnect the power cords from the power supply modules.

3.2 Accessing the System

A portion of the chassis top is removable to allow access to components.

Removing the Top Cover

1. Remove the screw on each side of the chassis.
2. Depress the release buttons and slide the cover back and off.

Caution: Except for short periods of time, do not operate the server without the cover in place. The chassis cover must be in place to allow for proper airflow and to prevent overheating.

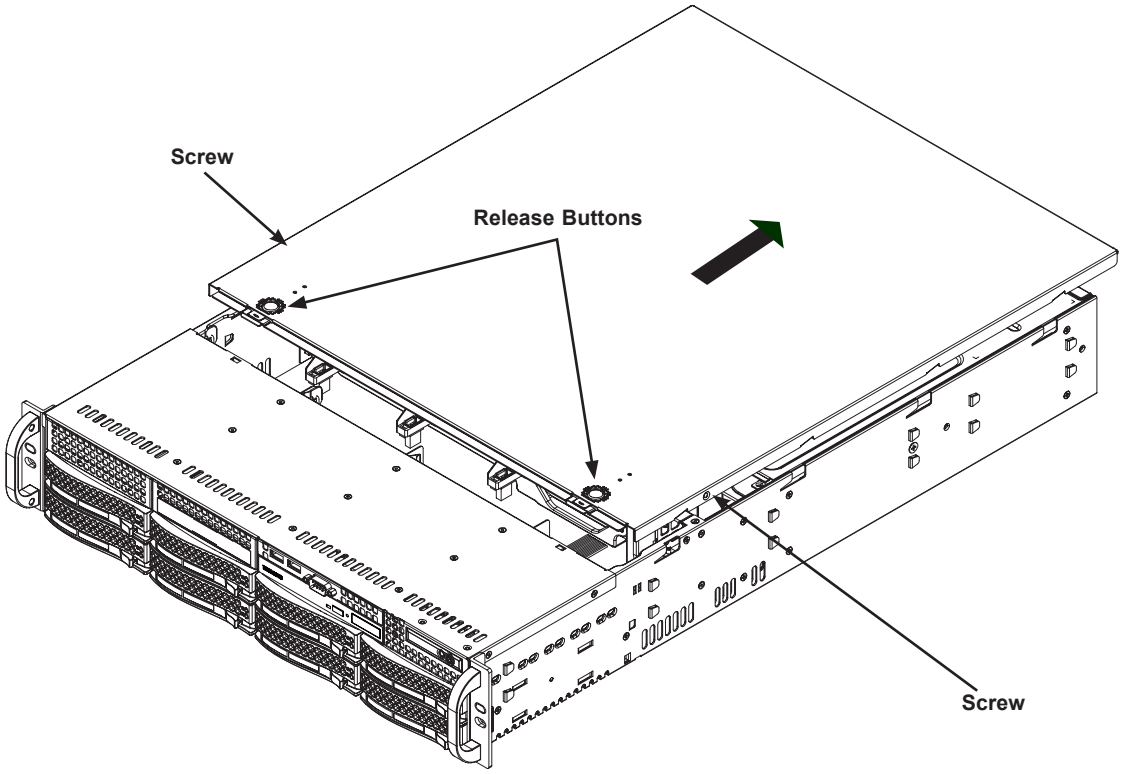


Figure 3-1. Removing the Chassis Cover

3.3 Motherboard Components

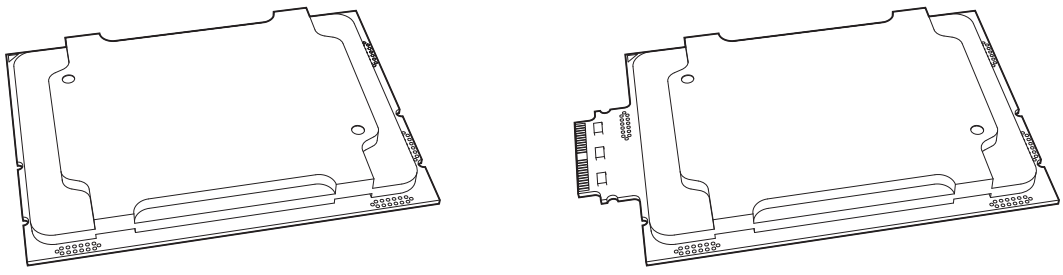
Processor and Heatsink Installation

Follow the procedures in this section to install a processor (CPU) and heatsink onto the motherboard. Improper CPU installation or socket misalignment can cause serious damage to the CPU or motherboard which may require RMA repairs.

Notes:

- All power should be off, as described in Section 3.1, before installing the processors.
- When handling the processor package, avoid placing direct pressure on the label area of the CPU or socket.
- The processor and heatsink should be assembled together first to form the Processor Heatsink Module (PHM), and then install the entire PHM into the CPU socket.
- When receiving a motherboard without a processor pre-installed, make sure that the plastic CPU socket cap is in place and none of the socket pins are bent; otherwise, contact your retailer immediately.
- Refer to the Supermicro website for updates on CPU support.

The Xeon Scalable Processor



SKX Processor

SKX-F Processor

Figure 3-2. Xeon Scalable Processors

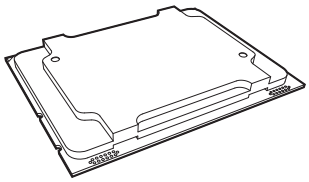
Note: The 6029P-TR(T) server supports only one -F model processor and it must be CPU1..

Note: All graphics, drawings, and pictures shown in this manual are for illustration only. The components that came with your server may or may not look exactly the same as those shown in this manual.

Overview of the Processor Socket Assembly

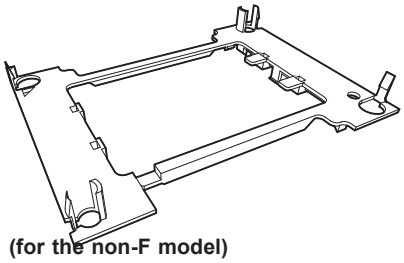
The processor socket assembly contains 1) the Intel SKX(-F) processor, 2) the narrow processor clip, 3) the dust cover, and 4) the CPU socket.

1. SKX (-F) Processor



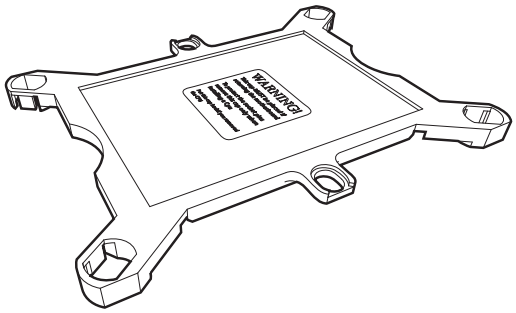
(The SKX Processor)

2. Narrow processor clip (the plastic processor package carrier used for the CPU)

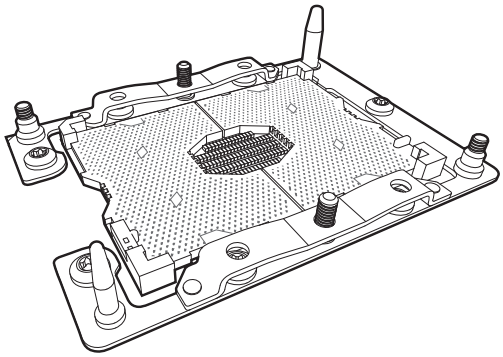


(for the non-F model)

3. Dust Cover



4. CPU Socket



Note: Be sure to cover the CPU socket with the dust cover when the CPU is not installed.

Heatsinks

The 6029P-TR(T) server uses a slightly different heatsink design for each CPU. The SNK-P0068PSC model is used for CPU1, the CPU closer to the mid-chassis fans.

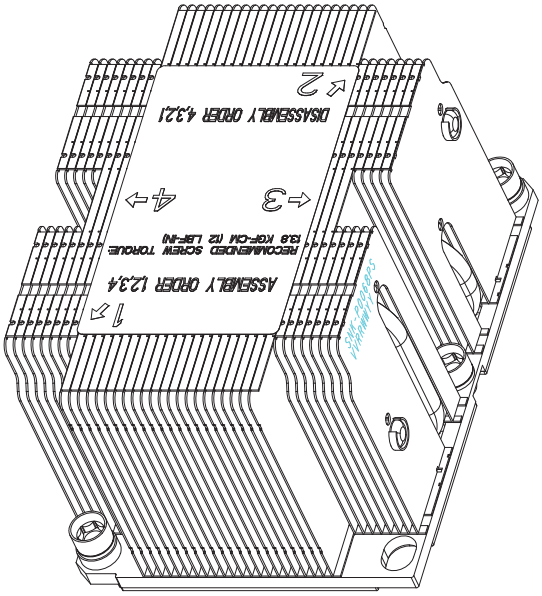


Figure 3-3. Heatsink SNK-P0068PS for CPU2

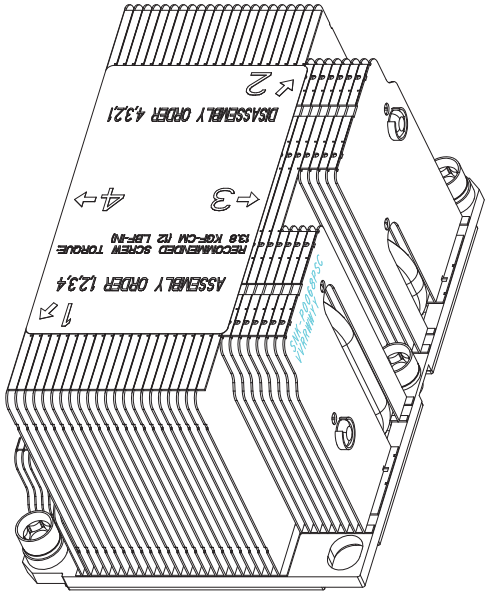


Figure 3-4. Heatsink SNK-P0068PSC for CPU1

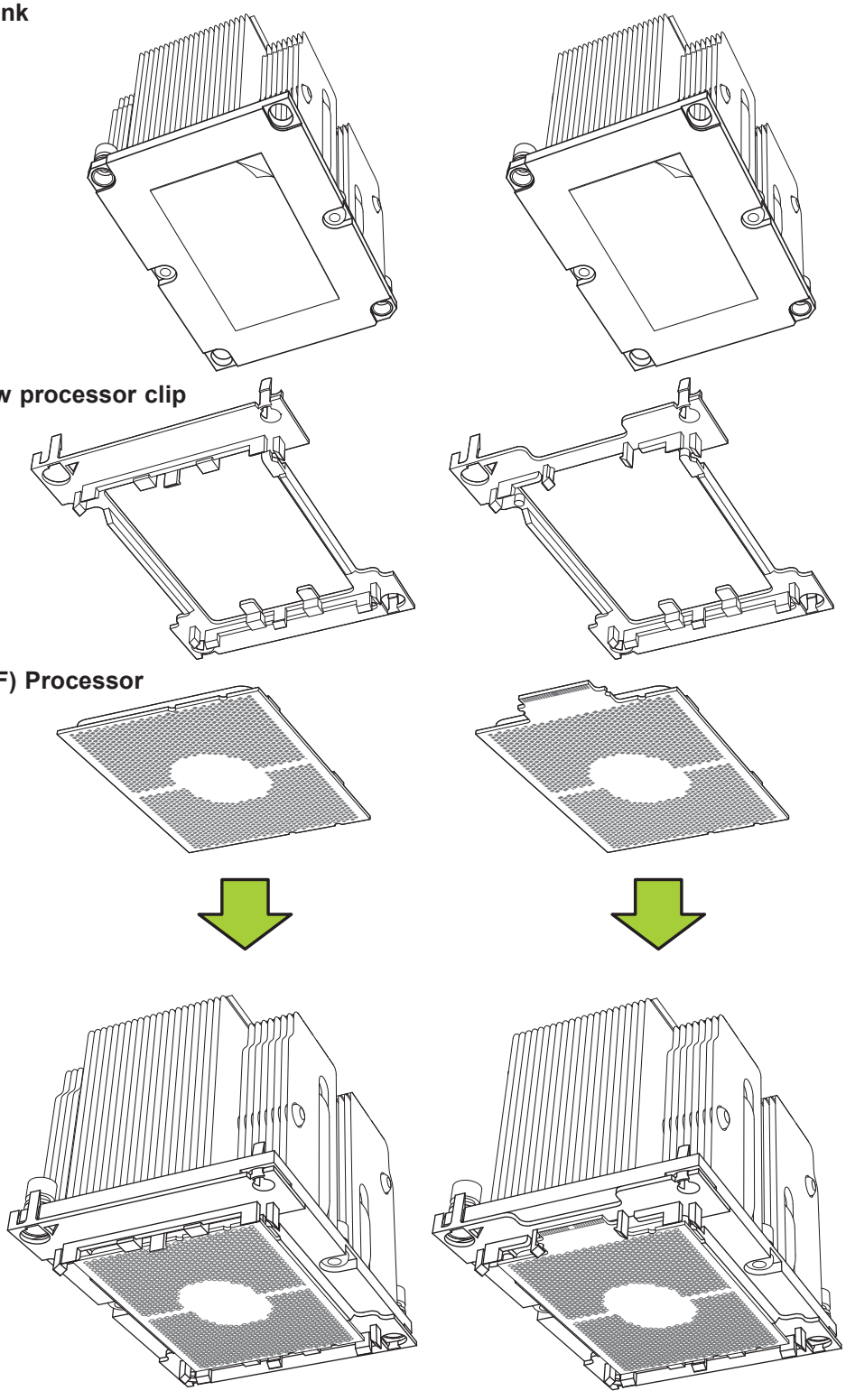
Overview of the Processor Heatsink Module (PHM)

The Processor Heatsink Module (PHM) contains 1) a heatsink, 2) a narrow processor clip, and 3) the SKX(-F) processor.

1. Heatsink

2. Narrow processor clip

3. SKX(-F) Processor



(Bottom View for a non-F Model and CPU2

(Bottom View for an F Model and CPU1

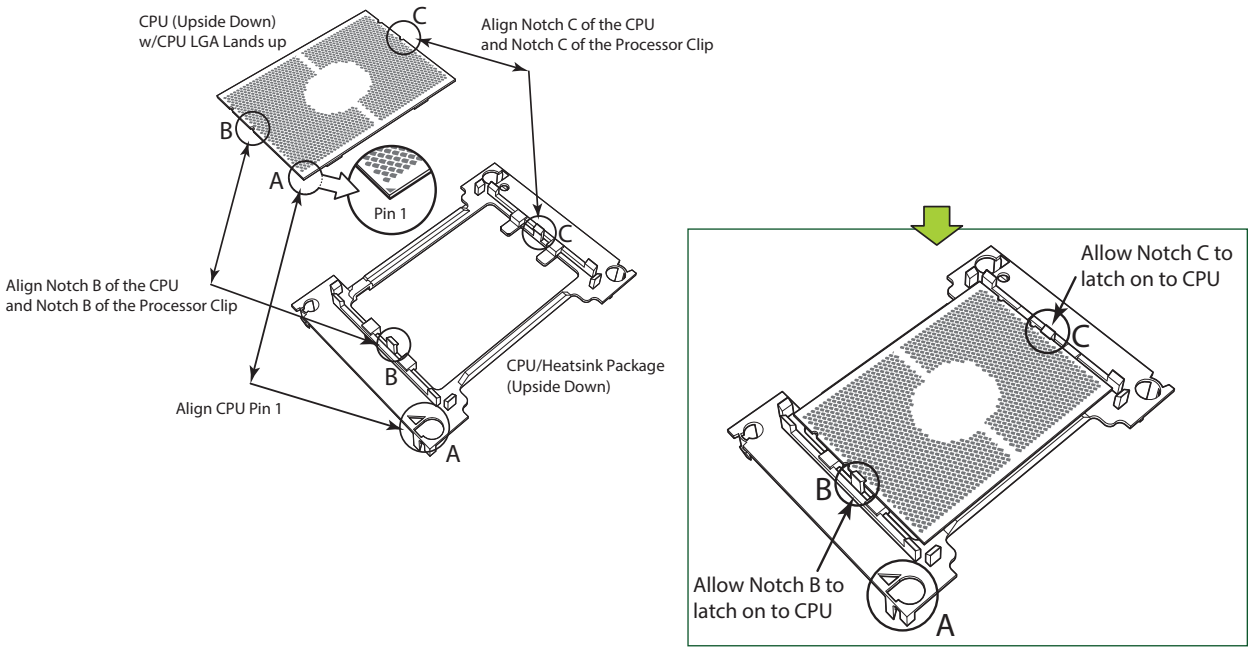
Assembling the Processor Package

Attach the processor to the narrow processor clip to create the processor package.

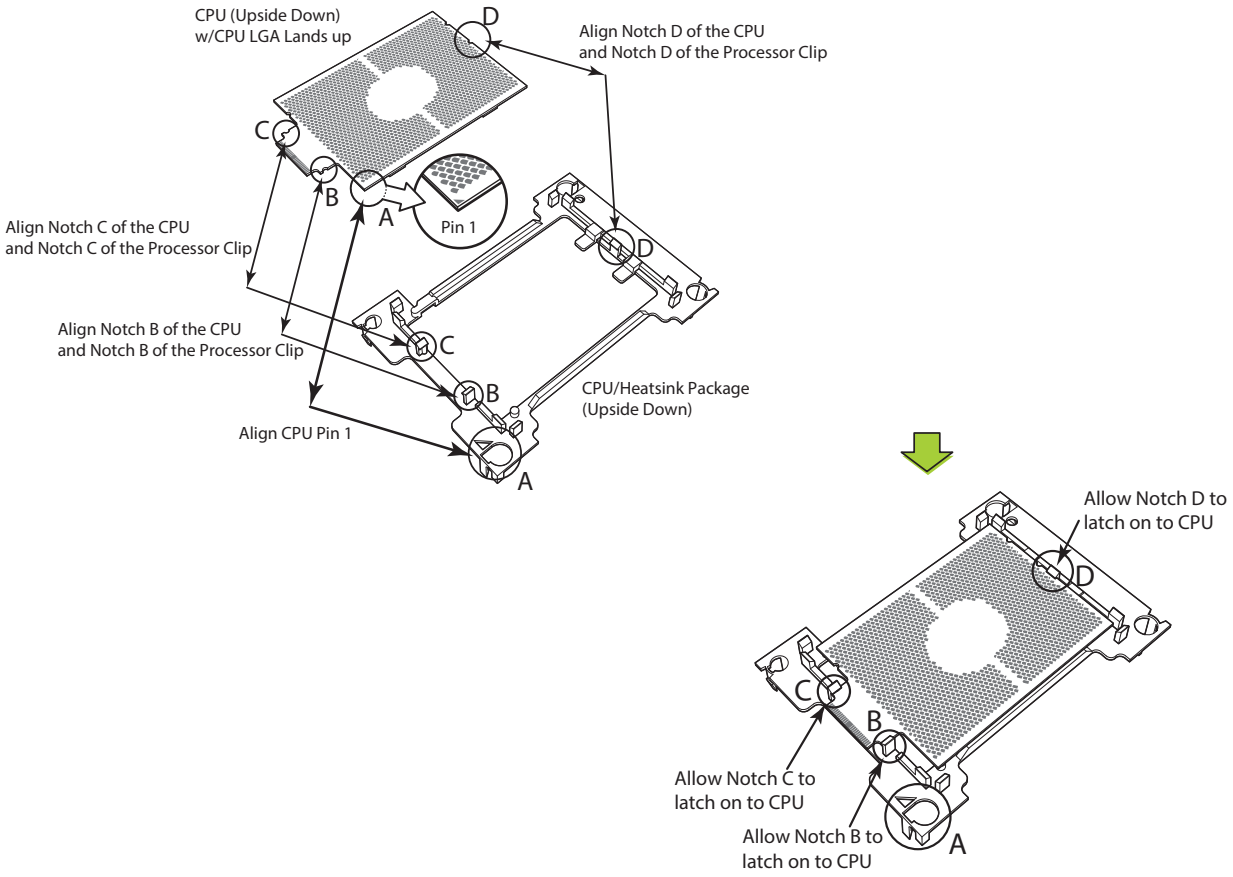
Caution: Be careful handling the CPU. Do not touch the underside. Wear ESD gloves.

1. On the top corner of the CPU, locate pin 1 (A), marked by a triangle. Also, locate notch B and notch C (and notch D for -F models) on the CPU as shown below.
2. On the top of the narrow processor clip, locate the corner marked by a triangle as the position for pin 1. Also locate notch B and notch C (and D for -F models) on the processor clip.
3. Align pin 1 of the CPU with its proper position on the processor clip and carefully insert the CPU into the processor clip. Slide notch B of the CPU into tab B of the processor clip, and slide notch C of the CPU into tab C of the processor clip (and D for -F models) until the processor clip tabs snap onto the CPU.
4. Examine all corners to ensure that the CPU is properly seated and secure on the processor clip.

The processor package assembly is created.



Processor Package Assembly for the non-F Model Processors
(with CPU mounted on the Processor Clip)



Processor Package Assembly for the -F Model Processors
(with CPU mounted on the Processor Clip)

Note: For 6029P-TR(T), the -F model processor is supported only as CPU1.

Assembling the Processor Heatsink Module (PHM)

After creating the processor package assembly, mount it onto the heatsink to create the processor heatsink module (PHM).

1. Locate "1" on the heatsink label and the corner next to it. With your index finger pressing against the screw at this corner, turn the heatsink upside down with the thermal grease side facing up.

2. Remove the protective thermal film if present. If this is a new heatsink, the necessary thermal grease has been pre-applied in the factory. If the heatsink is not new, apply the proper amount of the thermal grease.

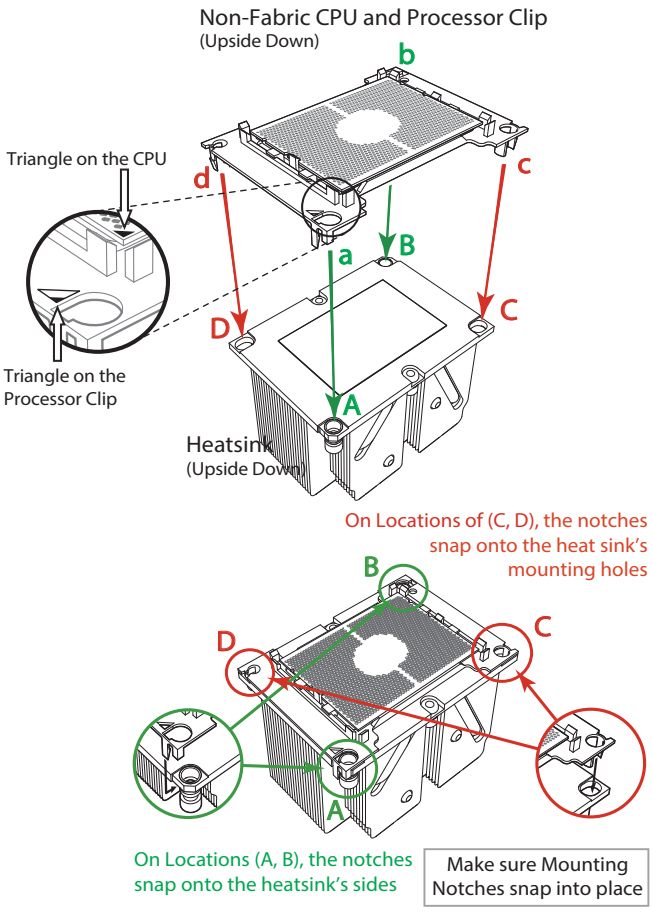
3. Holding the processor package assembly by the edge, locate the hollow triangle at the corner ("a" in the drawing below), and note a hole and plastic mounting clips next to the triangle. Also locate another set of mounting clips and a hole at the diagonal corner of the of the processor package assembly ("b" in the drawing).

4. With the underside of heatsink and the underside of the processor package assembly facing up, align the corner on the heatsink ("A" in the drawing) against the mounting clips next to the hollow triangle ("a") on the processor package assembly.

5. Also align the corner ("B") at the diagonal side of the heatsink with the corresponding clips on the processor package assembly ("b").

6. Once aligned, press the processor package assembly onto the heatsink until the mounting clips (at a, b, c, and d) snap into place.

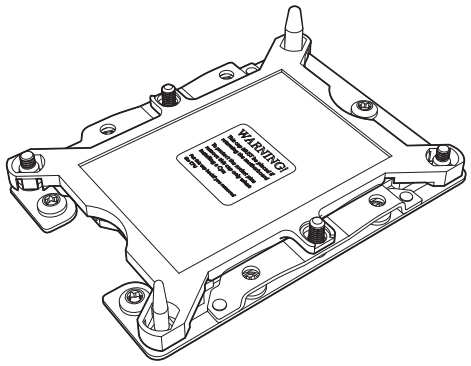
The processor heatsink module (PHM) is created.



Assembling the Processor Heatsink Module

Preparing the CPU Socket for Installation

This motherboard comes with the CPU socket assembled in the factory. It includes a dust cover, a socket bracket, the CPU socket (P0), and a back plate.

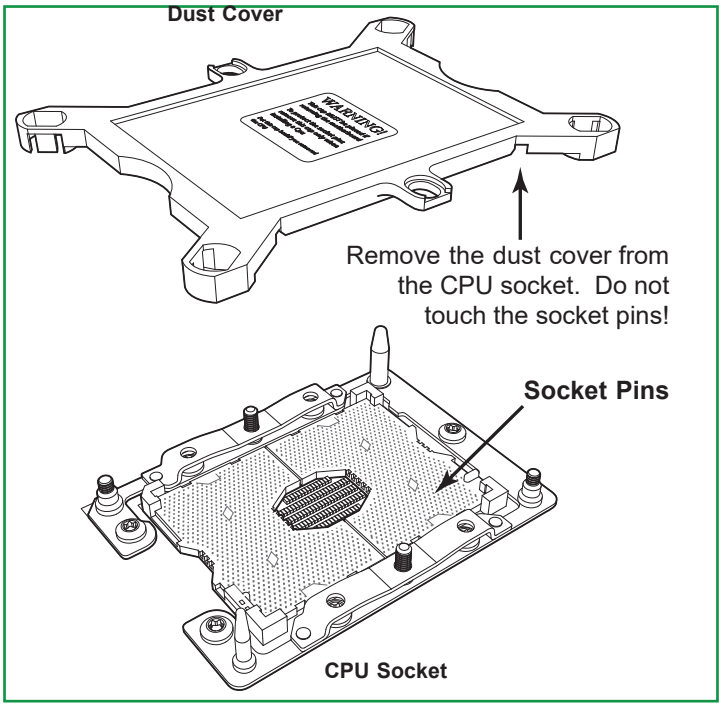


CPU Socket with Dust Cover On

Removing the Dust Cover from the CPU Socket

Remove the dust cover from the CPU socket, exposing the socket pins as shown below.

Caution: Do not touch the socket pins.

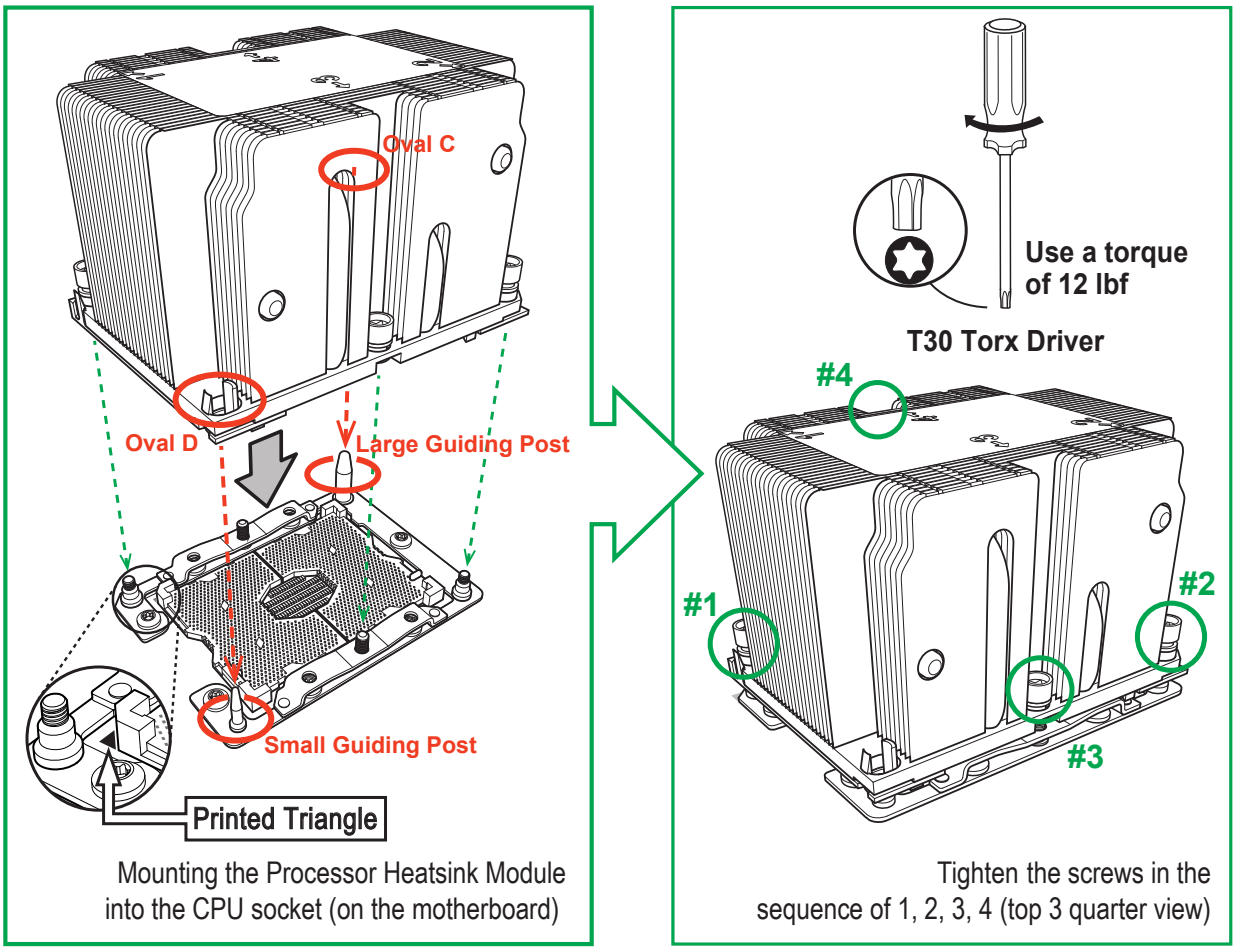


Removing the Socket Dust Cover

Installing the Processor Heatsink Module (PHM)

1. Locate the triangle (pin 1) on the CPU socket, and locate the triangle (pin 1) at the corner of the PHM that is closest to "1." (If you have difficulty locating pin 1, turn the PHM upside down. On the underside of the CPU, you can see the hollow triangle located next to a screw at the corner. Turn the PHM right side up, and you will see a triangle marked on the processor clip at the same corner as hollow triangle.)
2. Align pin 1 corner of the PHM over pin 1 corner on the CPU socket.
3. Align the two holes at diagonal corners of the PHM onto the two guide posts on the socket bracket and carefully drop the PHM onto the socket.
4. Use a T30 Torx-bit screwdriver to install four screws into the mounting holes on the socket to securely attach the PHM onto the motherboard in the sequence of 1, 2, 3, and 4, as marked on the heatsink label. Gradually tighten each to assure even pressure.

Note: Use only 12 foot-pounds of torque when tightening the screws to avoid damaging the processor or the socket.



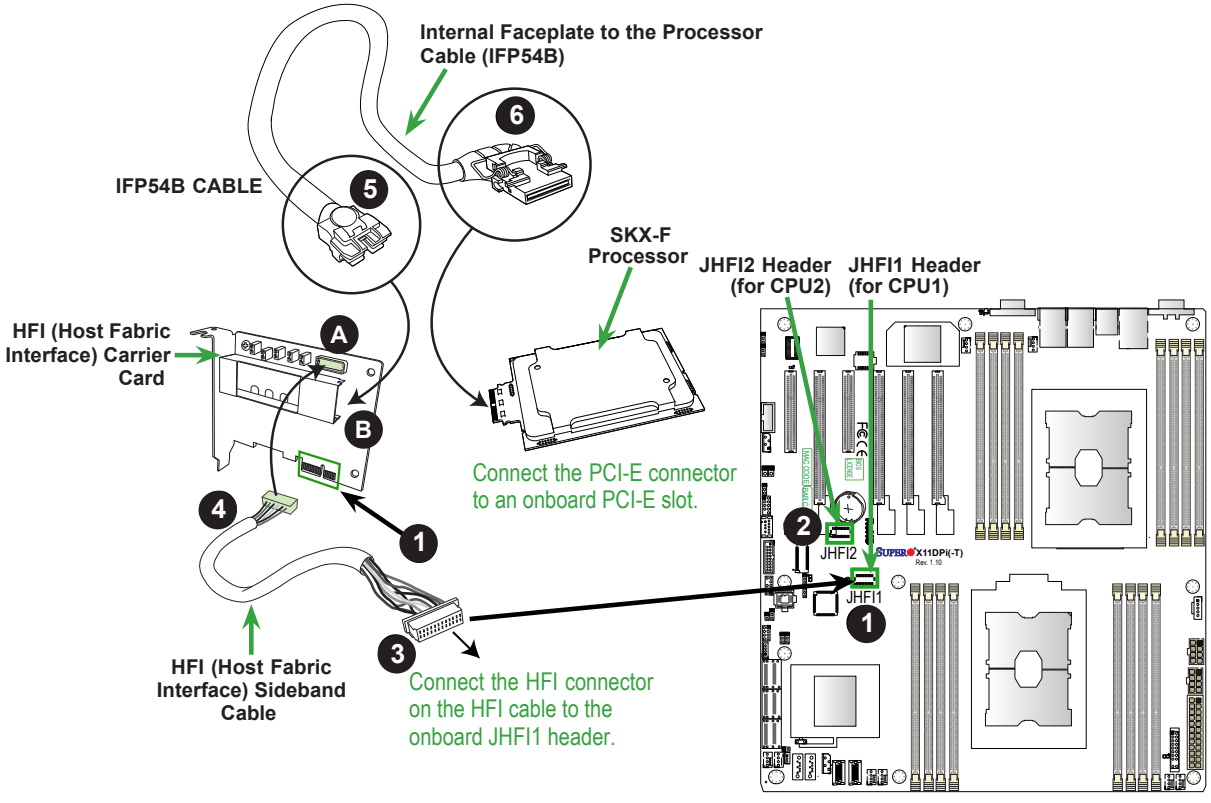
Installing the Processor Heatsink Module

Connecting an HFI Carrier Card

A host fabric interface (HFI) carrier card can be connected the JHFI sideband header and to an SKX-F processor. Two HFI headers are located on the X11DPi-N(T) motherboard. JHFI1 is used for CPU 1, and JHFI2 is for CPU2. (For more information on the JHFI1/JHFI2 headers, see Chapter 4.) **Note**: The 6029P-TR(T) server supports only one -F model processor, and thus only one HFI connection.

Installation Instructions

1. Install the HFI carrier card to an appropriate PCIe slot.
2. Locate the JHFI1 header on the motherboard. If CPU2 is used, use the JFHI2 header on the motherboard.
3. Connect the HFI connector on the HFI sideband cable to the JHFI1 header.
4. Connect the other end of the HFI cable to the connector (marked A) on the HFI card as shown below.
5. Connect the the plug (marked 5) on one end of the IFP54B cable to the connector (marked B) on the HFI card as shown below.
6. Connect the other end of IFP54B cable to the SKX-F CPU as shown below.

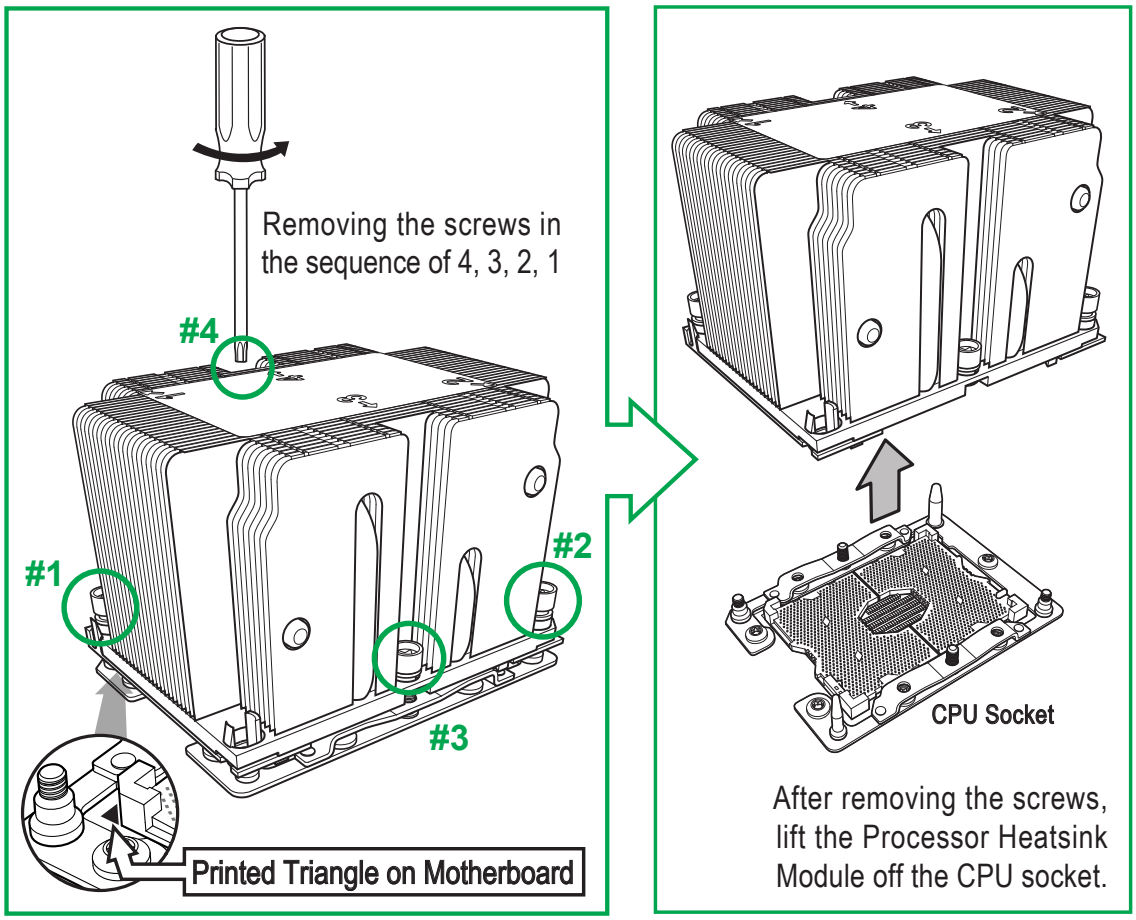


Connecting the HFI Carrier Card

Removing the Processor Heatsink Module from the Motherboard

Before removing the processor heatsink module (PHM), power down as described in Section 3.1.

1. Using a T30 Torx-bit screwdriver, loosen and remove the screws on the PHM from the socket, starting with the screw marked #4, in the sequence of 4, 3, 2, 1.
2. Pull up the PHM while releasing the small snap tabs on two corners of the socket.



Removing the Processor Heatsink Module

Memory

Memory Support

The 6029P-TR(T) supports up to 2 TB of Load Reduced DIMM (LRDIMM), Registered DIMM (RDIMM), Non-Volatile DIMM (NV-DIMM) DDR4 (288-pin) ECC 2666/2400/2133 MHz memory modules in 16 slots. Memory speed is dependent on the processor model.

Populating these DIMM modules with a pair of memory modules of the same type and size will result in interleaved memory, which will improve memory performance. Using unbalanced memory topology, such as populating two DIMMs in one channel while populating one DIMM in another channel on the same motherboard will result in reduced memory performance.

Check the Supermicro website for possible updates to memory support.

DIMM Module Population Configuration

For optimal memory performance, follow the specifications below when populating memory.

DDR4 Memory Support for the Intel Intel 81xx/61xx/51xx/41xx/31xx series Processor Platform					
Type	Ranks Per DIMM and Data Width	DIMM Capacity (GB)		Speed (MT/s); Voltage (V); Slots per Channel (SPC) and DIMMs per Channel (DPC)	
				2 Slots per Channel	
				1DPC (1-DIMM per Channel)	2DPC (2-DIMM per Channel)
		4 Gb	8 Gb	1.2 V	1.2 V
RDIMM	SRx4	8 GB	16 GB	2666	2666
RDIMM	SRx8	4 GB	8 GB	2666	2666
RDIMM	DRx8	8 GB	16 GB	2666	2666
RDIMM	DRx4	16 GB	32 GB	2666	2666
RDIMM 3Ds	QRX4	N/A	2H-64GB	2666	2666
	8RX4	N/A	4H-128GB	2666	2666
LRDIMM	QRx4	32 GB	64 GB	2666	2666
LRDIMM 3Ds	QRX4	N/A	2H-64GB	2666	2666
	8Rx4	N/A	4H-128 GB	2666	2666

Key Parameters for DIMM Configurations	
Parameters	**Possible Values**
Number of Channels	1, 2, 3, 4, 5, or 6
Number of DIMMs per Channel	1DPC (1 DIMM Per Channel) or 2DPC (2 DIMMs Per Channel)
DIMM Type	RDIMM (w/ECC), LRDIMM, 3DS-LRDIMM
DIMM Construction	- non-3DS RDIMM Raw Cards: A/B (2RX4), C (1RX4), D (1RX8), E (2RX8) - 3DS RDIMM Raw Cards: A/B (4RX4) - non-3DS LRDIMM Raw Cards: D/E (4RX4) - 3DS LRDIMM Raw Cards: A/B (8RX4)

General Population Requirements
DIMM Mixing Rules
- All DIMMs must be DDR4. - X4 and X8 DIMMs can be mixed in the same channel. - Mixing of LRDIMMs and RDIMMs is not allowed in the same channel, across different channels, and across different sockets. - Mixing of non-3DS and 3DS LRDIMM is not allowed in the same channel, across different channels, and across different sockets.

Mixing of DIMM Types within a Channel			
DIMM Types	**RDIMM**	**LRDIMM**	**3DS LRDIMM**
RDIMM	Allowed	Not Allowed	Not Allowed
LRDIMM	Not Allowed	Allowed	Not Allowed
3DS LRDIMM	Not Allowed	NotAllowed	Allowed

(DDR4 Only) Socket Level Population Requirements
DDR4 Socket Level Minimum Population Requirements
- There should be at least one DDR4 DIMM per socket. - If only one DIMM is populated in a channel, then populate it in the slot furthest away from CPU. - Always populate DIMMs with a higher electrical loading in DIMM0 followed by DIMM1.

(DDR4 Only) Memory Populations with Possible Mixes					
DDR4 RDIMM		**DIMM0/DIMM1 Config. Set A**	**DIMM0/DIMM1 Config. Set B**	**DIMM0/DIMM1 Config. Set C**	**Possible Mixes DIMM0/DIMM1**
Within IMC DIMM Population	**DDR0**	x8, None, x8, x8	x4, None, x4, x4	x8, x4, or x4, x8	Single Rank, None Single Rank, Single Rank Dual Rank, Single Rank, Dual Rank, None Dual Rank, Dual Rank, Single Rank, Single Rank
	DDR1	None or same as DDR0	None or same as DDR0	None or same as DDR0	
	DDR2	None or same as DDR1 (excludes DIMM 1 in 5DIMM configurations)	None or same as DDR1 (excludes DIMM 1 in 5DIMM configurations)	None or same as DDR1 (excludes DIMM 1 in 5DIMM configurations)	

(DDR4 Only) Memory Populations with Possible Mixes			
3DS LRDIMM or 3DS RDIMM		**DIMM0/DIMM1 Config. Set A**	**Possible Mixes DIMM0/DIMM1**
Within IMC DIMM Population	**DDR0**	x4, None, x4, x4	Quad Rank, None Quad Rank, Quad Rank Cannot mix 3DS LRDIMM and RDIMM
	DDR1	None or same as DDR0	
	DDR2	None or same as DDR1	

(DDR4 Only) Memory Populations with Possible Mixes			
LRDIMMs		**DIMM0/DIMM1**	**Possible Mixes DIMM0/DIMM1**
Within IMC DIMM Population	**DDR0**	x4, None, x4, x4	Quad Rank, None Quad Rank, Quad Rank ***Note*: Requirements** *Match DIMM types installed across DDR channels within an IMC *Always populate iMC0 first
	DDR1	None or same as DDR0	
	DDR2	None or same as DDR1	

(DDR4 Only) 2SPC Memory Configuration with x8 DIMMs				
	Total # of DIMMs	**DDR Channel**	**Number of Ranks**	**Virtual Lock Step**
DIMM Population within an IMC (**Note**: Uniformly populate with x8 DRAMs DIMMs)	1 x8 DIMM	Must be installed on iMC0 DDR Channel 0	1	N/A
			>1	SVLS
	2 x8 DIMMs	DDR0: Populate with 1 DIMM DDR1: Populate identically as DDR0	1	N/A
			>1	SVLS
	3 x8 DIMMs	DDR0: Populate with 1 DIMM DDR1: Populate identically as DDR0 DDR2: Populate identically as DDR1	1	N/A
			>1	SVLS
	4 x8 DIMMs	DDR0: Populate with 2 DIMMs DDR1: Populate identically as DDR0	x	SVLS
	5 x8 DIMMs	DDR Channel 0, 1, 2: DIMM0 is populated with identical DIMMs, DDR Channel 0, 1: DIMM1 is populated with identical DIMMs	>1	SVLS
	6 x8 DIMMs	Populate 2 DIMMs per DDR channel	x	SVLS
DIMM Population within an IMC (**Note**: Non-equal in rank pair of x8 DIMMs)	1 pair of DIMMs	DDR0: Populate with 1 DIMM DDR1: Populate the second DIMM (for best performance)	1	N/A
			>1	SVLS
	2 pairs of DIMMs	DDR0: Populate with 1 pair of non-equal rank DIMMs DDR1: Populate identically as DDR0	1	N/A
			>1	SVLS
	3 pairs of DIMMs	DDR0: Populate with 1 pair of non-equal rank DIMMs DDR1: Populate identically as DDR0 DDR2: Populate identically as DDR1	x	SVLS
	2 pairs+1 (5 DIMMs)	DDR0: Populate with 1 pair of non-equal rank DIMMs DDR1: Populate with identical DIMMs as DDR0 DDR2: DIMM0 is populated with identical DIMM as DDR1	>1	SVLS

(DDR4 Only) 2SPC Memory Configuration with x4 DIMMs				
	Total # of DIMMs	**DDR Channel**	**Number of Ranks**	**Adaptive Virtual Lock Step**
DIMM Population within an IMC Note: Uniformly populate with x4 DRAMs/ DIMMs	1 x4 DIMM	Must be installed on iMC0 DDR Channel 0	1	Y, only Bank VLS
			>1	Y
	2 x4 DIMMs	DDR0: Populate with 1 DIMM DDR1: Populate identically as DDR0	1	Y, only Bank VLS
			>1	Y
	3 x4 DIMMs	DDR0: Populate with 1 DIMM DDR1: Populate identically as DDR0 DDR2: Populate identically as DDR1	1	Y, only Bank VLS
			>1	Y
	4 x4 DIMMs	DDR0: Populate with 2 DIMMs DDR1: Populate identically as DDR0	x	Y
	5 x4 DIMMs	DDR Channel 0, 1, 2: DIMM0 is populated with identical DIMMs, DDR Channel 0, 1: DIMM1 is populated with identical DIMMs	>1	Y
	6 x4 DIMMs	Populate 2 DIMMs per DDR channel	x	Y
DIMM Population within an IMC Note: Non-equal in rank pair of x4 DIMMs)	1 pair of DIMMs	DDR0: Populate with 1 DIMM DDR1: Populate the second DIMM (for best performance)	>1	Y
	2 pairs of DIMMs	DDR0: Populate with 1 pair of non-equal rank DIMMs DDR1: Populate identically as DDR0	>1	Y
	3 pairs of DIMMs	DDR0: Populate with 1 pair of non-equal rank DIMMs DDR1: Populate identically as DDR0 DDR2: Populate identically as DDR1	x	Y
	2 pairs+1 (5 DIMMs)	DDR0: Populate with 1 pair of non-equal rank DIMMs DDR1: Populate with identical DIMMs as DDR0 DDR2: DIMM0 is populated with identical DIMM as DDR1	>1	Y

(DDR4 Only) 2SPC Memory Configuration with x8/x4 DIMMs Mixed			
DDR4 RDIMM	**Total # of DIMMs**	**DDR Channel**	**ADDC/SDDC Features**
DIMM Population within an IMC	1 pair of x8, x4	DDR0: Populate with 1 DIMM DDR1: Populate the second DIMM (for best performance)	No
	2 pairs of x8, x4	Populate with 1 pair of DIMMs on DDR0, and identical pair on DDR1	No
	3 pairs of x8, x4	A pair of DIMMs on DDR0, and identical pair on DDR1, and DDR2	No

Install Procedure

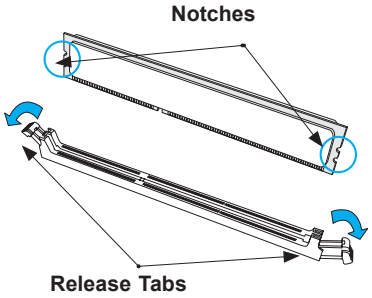
The DIMM slots must be populated in the following order: P1-DIMMA1, P1-DIMMA2, then P1-DIMMB1, DIMMB2. The blue slots must be populated first.

Caution: Exercise caution when installing or removing memory modules to prevent damage to the DIMMs or slots.

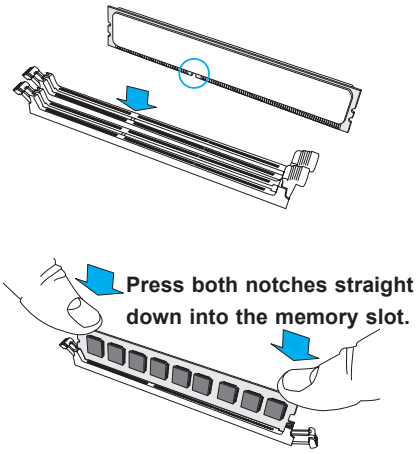
Installing Memory

1. Remove power from the system as described in Section 3.1.

2. Starting with P1-DIMMA1, push the release tabs outwards on both ends of the DIMM slot to unlock it.



3. Align the key of the DIMM with the receptive point on the memory slot and with your thumbs on both ends of the module, press it straight down into the slot until the module snaps into place.

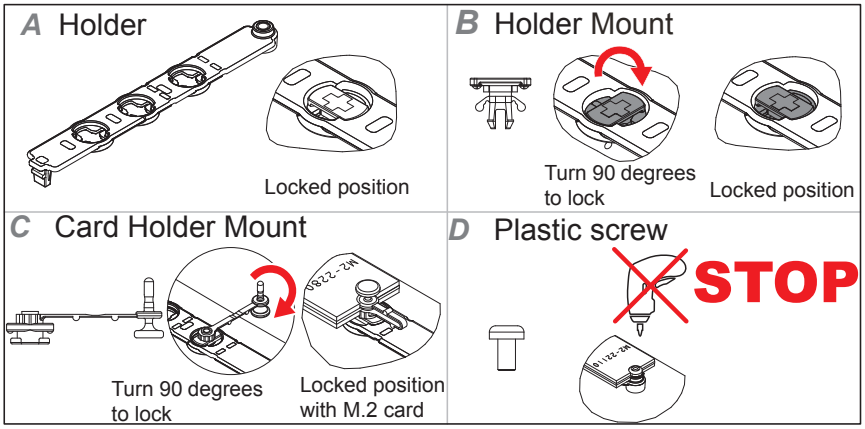


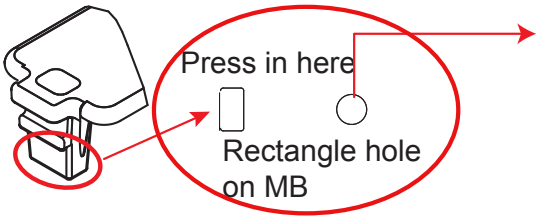
4. Press the release tabs to the locked position to secure the DIMM module into the slot.

To remove a DIMM module, unlock the release tabs then pull the module from the slot.

PCIe M.2 Slot

The motherboard has one M.2 slot. M.2 was formerly Next Generation Form Factor (NGFF) and serves to replace mini-PCIe. M.2 allows for a variety of card sizes, increased functionality, and spatial efficiency. The M.2 socket on the motherboard supports PCIe 3.0 X4 (32 Gb/s) SSD cards in the 2280 and 22110 form factors.





Hole Location on the MB 42	
M.2 Card 60	A+B+C
M.2 Card 80	A+B+C
M.2 Card 110	A+B+D

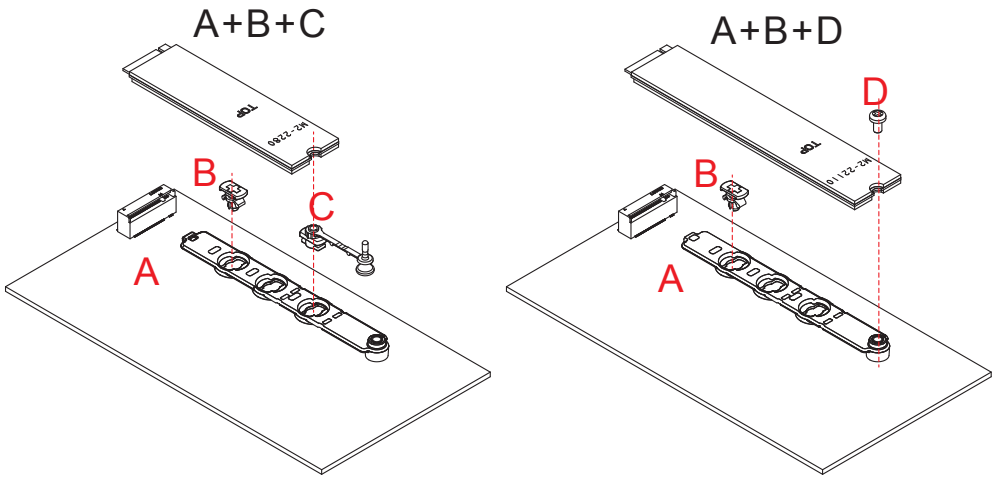


Figure 3-5. M.2 Mounting Instructions

Motherboard Battery

The motherboard uses non-volatile memory to retain system information when system power is removed. This memory is powered by a lithium battery residing on the motherboard.

Replacing the Battery

1. Remove power from the system as described in section 3.1 and remove the node from the chassis.
2. Push aside the small clamp that covers the edge of the battery. When the battery is released, lift it out of the holder.
3. To insert a new battery, slide one edge under the lip of the holder with the positive (+) side facing up. Then push the other side down until the clamp snaps over it.

Note: Handle used batteries carefully. Do not damage the battery in any way; a damaged battery may release hazardous materials into the environment. Do not discard a used battery in the garbage or a public landfill. Please comply with the regulations set up by your local hazardous waste management agency to dispose of your used battery properly.

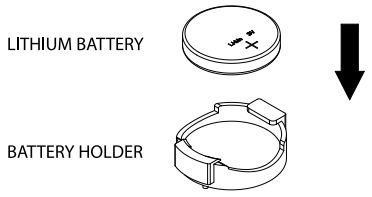


Figure 3-6. Installing the Onboard Battery

Warning: There is a danger of explosion if the onboard battery is installed upside down (which reverses its polarities). This battery must be replaced only with the same or an equivalent type recommended by the manufacturer (CR2032).

3.4 Chassis Components

Storage Drives

The SC825 chassis supports eight 3.5" SATA3 storage drives (HDDs or SSDs) in drive carriers to simplify their removal from the chassis. These carriers also help promote proper airflow.

Note: Enterprise level hard disk drives are recommended for use in Supermicro chassis and servers. For information on recommended HDDs, visit the Supermicro website at http://www.supermicro.com/products/nfo/files/storage/SBB-HDDCompList.pdf.

The server also supports PCIe M.2 storage that can be installed directly on the motherboard. See Section 3.3.

Drive Carrier Indicators

Each drive carrier has two LED indicators: an activity indicator and a status indicator. In RAID configurations, the status indicator lights to indicate the status of the drive. In non-RAID configurations, the status indicator remains off. See the table below for details.

Drive Carrier LED Indicators			
	Color	**Blinking Pattern**	**Behavior for Device**
Activity LED	Off		No drive, or SATA drive installed
	Blue	Solid On	SAS drive installed
	Blue	Blinking	I/O activity
Status LED	Red	Solid On	Failure of drive with RSTe support
	Red	Blinking at 1 Hz	Rebuild drive with RSTe support
	Red	Blinking with two blinks and one stop at 1 Hz	Hot spare for drive with RSTe support
	Red	On for five seconds, then off	Power on for drive with RSTe support
	Red	Blinking at 4 Hz	Identify drive with RSTe support

Installing Drives

Removing Drive Carriers from the Chassis

1. Press the release button on the drive carrier. This extends the drive carrier handle.
2. Use the handle to pull the carrier out of the chassis.
3. Remove the dummy drive from the carrier.

Caution: Except for short periods of time (swapping drives), do not operate the server with the drive carriers removed from the bays, regardless of how many drives are installed, for proper airflow.

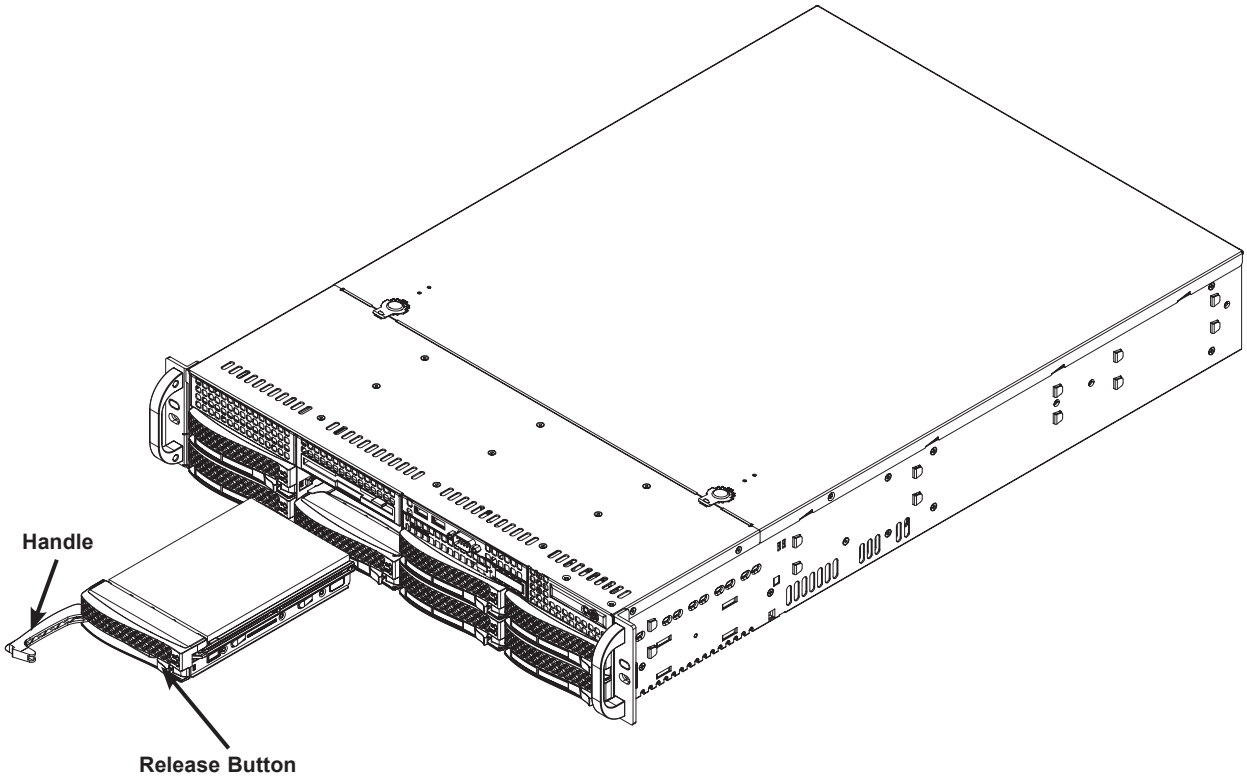


Figure 3-7. Removing a Drive Carrier

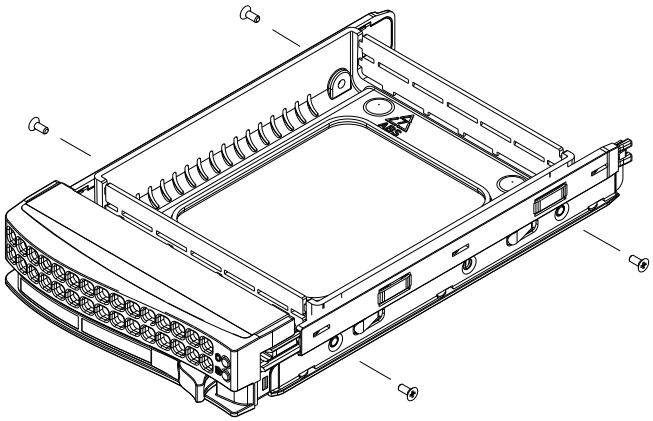


Figure 3-8. Removing the Dummy Drive

Installing a Hard Drive

1. Place the hard drive carrier on a flat surface.
2. Insert the hard drive into the carrier with the printed circuit board side facing downward and so that the mounting holes in the drive align with those in the drive carrier.
3. Secure the hard drive to the carrier with the four screws included with the hard drive.
4. Use the open handle of the drive carrier to insert the drive carrier into the open drive bay.
5. Secure the drive carrier into the drive bay by closing the drive carrier handle

DVD Drive Installation *(Optional)*

The system accomodates an optional slim DVD drive. Side mounting brackets are typically required.

Installing a DVD Drive

1. Power down the system as described in Section 3.1 and remove the chassis cover.
2. Remove the mini-bezel (grate) from the drive bay The bezel can be removed by pulling out the hard drive beneath the DVD drive bay, then pulling the mini-bezel forward.
3. Insert the new drive unit in the slot until the tab locks in place.
4. Connect the data and power cables.
5. Replace the chassis cover and power up the system.

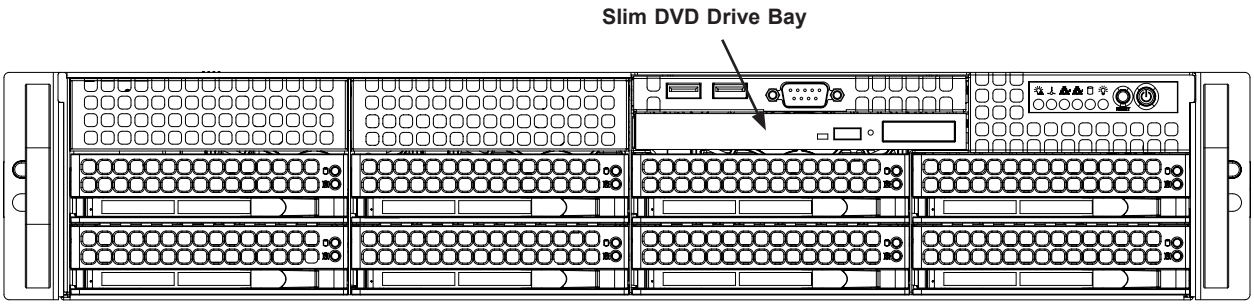


Figure 3-9. DVD Drive Bay

To remove the DVD drive, unplug the power and data cables. Locate the locking tab at the rear (left hand side when viewed from the front) of the DVD drive. Push the tab toward the drive and push the drive unit out the front of the chassis.

Installing Expansion Cards

The system can accommodate six low-profile PCIe cards. The chassis has seven: the slot nearest the chassis center is not supported by this motherboard.

Installing an Expansion Card

1. Power down the system and remove the cover.
2. In the rear of the chassis, remove the blank PCI shield that covers the chassis slot.
3. Slide the expansion card into the expansion slot on the motherboard while aligning it with the chassis slot in the rear of the chassis.
4. Secure the expansion card shield onto the rear of the chassis with a screw.

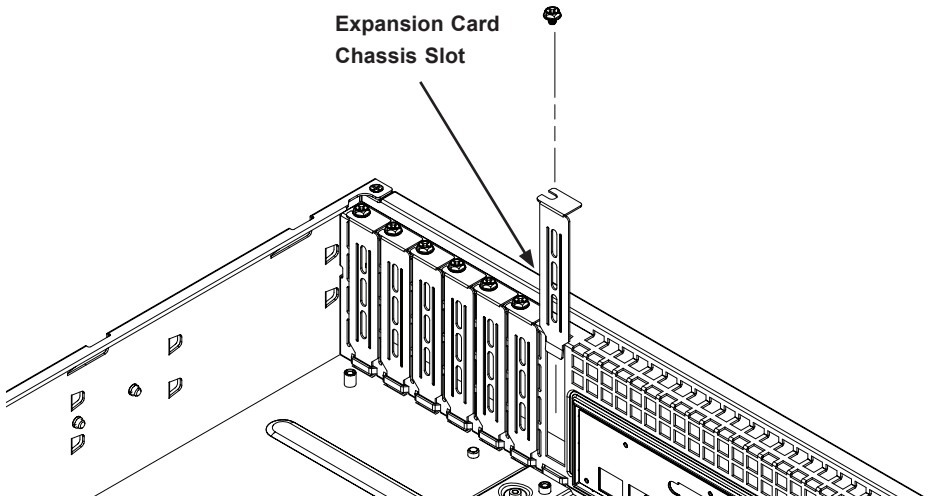


Figure 3-10. Removing a Blank PCI Shield

System Fans

Three hot-swap fans provide cooling. They can be replaced without powering down the system.

Fan speed is controlled by a system temperature setting in IPMI. If a fan fails, the remaining fans will ramp up to full speed. The system can continue to run with a failed fan. Replace any failed fan at your earliest convenience with the same type and model.

Changing a System Fan

1. Determine which fan is failing. If possible, use IPMI. If not, remove the chassis cover while the power is on, and examine the fans to determine which one has failed.
2. Remove the failed fan's power cable from the backplane.
3. Lift the fan housing up and out of the chassis.
4. Push the fan up from the bottom and out of the top of the housing.
5. Place the replacement fan into the vacant space in the housing while making sure the arrows on the top of the fan (indicating air direction) point in the same direction as the arrows on the other fans.
6. Put the fan housing back into the chassis and reconnect the cable.
7. Replace the drawer and confirm that the fan is working properly before replacing the chassis cover.

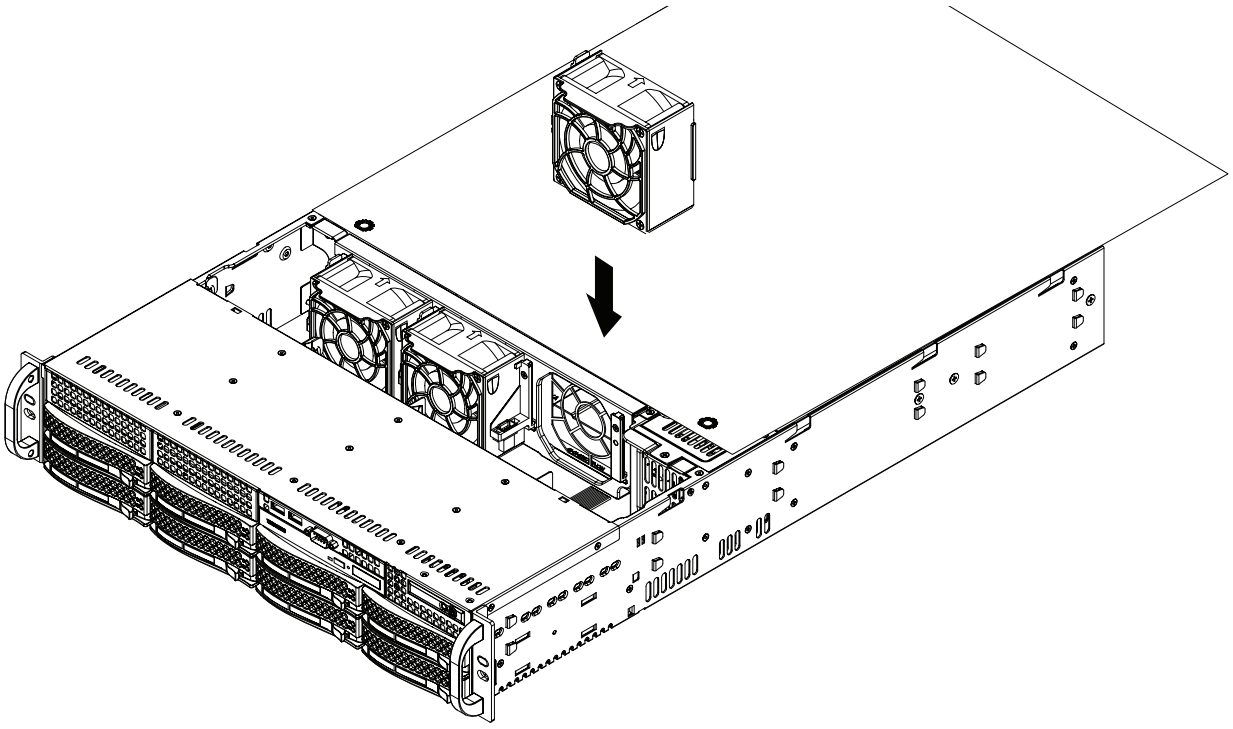


Figure 3-11. System Fan Placement

Installing the Air Shrouds

Air shrouds concentrate airflow to maximize fan efficiency. It covers the processors and heatsinks.

Installing an Air Shroud

The air shroud fits behind the two fans closest to the power supply. Align the pins and press the air shroud into the chassis along the edges.

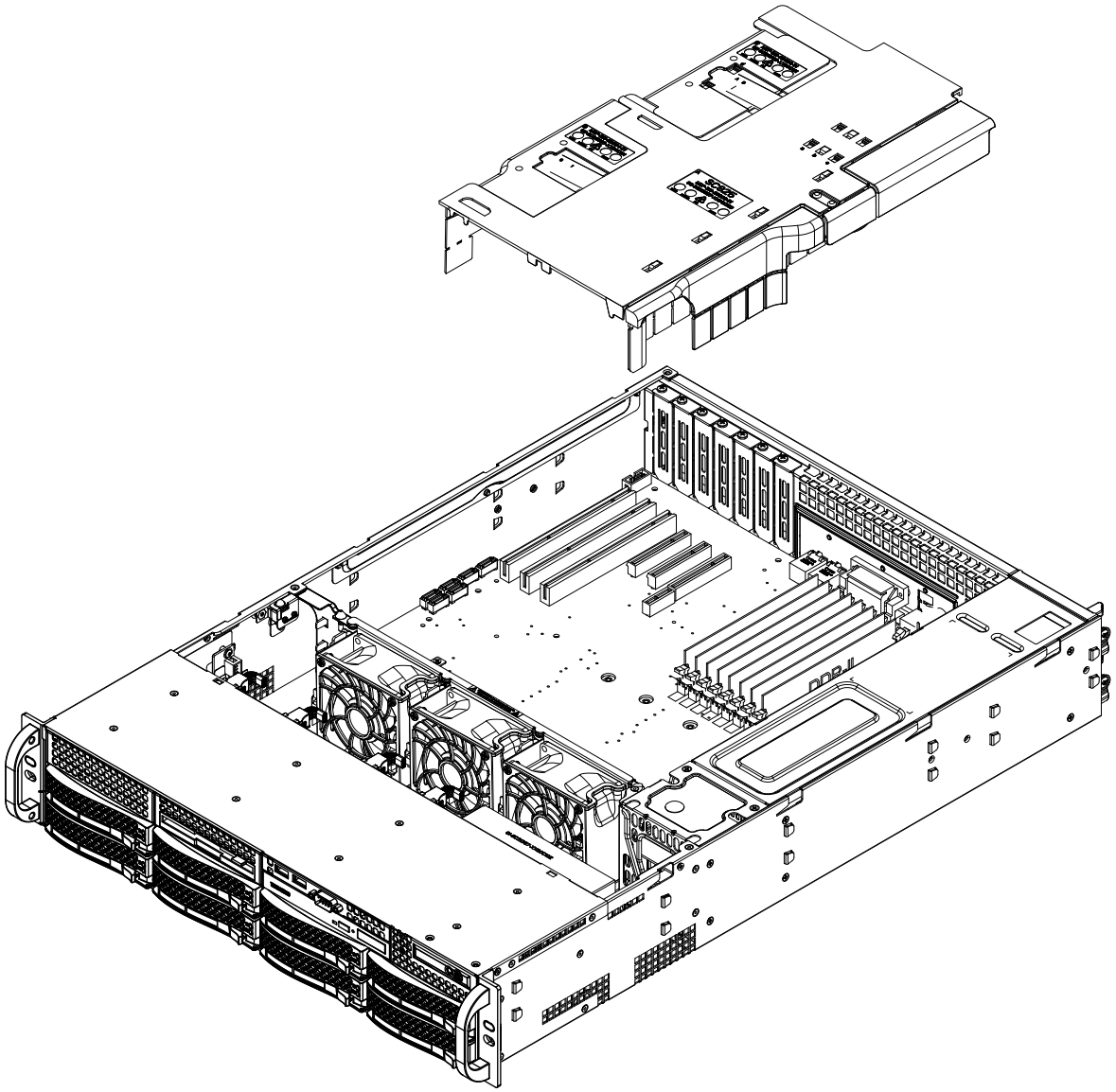


Figure 3-12. Installing the Air Shroud

Checking the Airflow

- Make sure there are no objects obstructing the airflow in and out of the chassis.
- Make sure no wires or foreign objects obstruct airflow through the chassis. Pull all excess cabling out of the airflow path or use shorter cables.

Power Supply

The chassis features redundant power supplies. The power modules can be changed without powering down the system. New units can be ordered directly from Supermicro or authorized distributors.

These power supplies are auto-switching capable. This feature enables them to automatically sense the input voltage and operate at a 100-120v or 180-240v. An amber light will be illuminated on the power supply when the power is off. An illuminated green light indicates that the power supply is operating.

Replacing the Power Supply

1. Unplug the AC cord from the module to be replaced.
2. Push the release tab on the back of the power supply as illustrated.

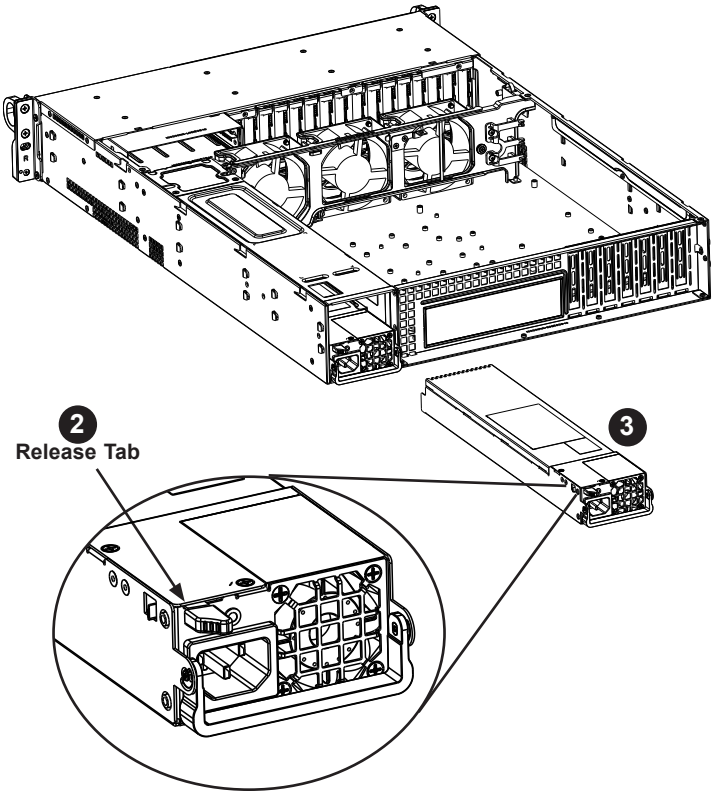


Figure 3-13. Power Supply Release Tab

3. Pull the power supply out using the handle.
4. Replace the failed power module with the same model.
5. Push the new power supply module into the power bay until it clicks.
6. Plug the AC power cord back into the module.

Chapter 4

Motherboard Connections

This section describes the connections on the motherboard and provides pinout definitions. Note that depending on how the system is configured, not all connections are required. The LEDs on the motherboard are also described here. A motherboard layout indicating component locations may be found in Chapter 1.

Please review the safety precautions in Appendix B before installing or removing components.

4.1 Power Connections

Three power connections on the X11DPi-N(T) must be connected to the power supply. The wiring is included with the power supply.

- One 24-pin Primary ATX Power (JPWR3)
- Two 8-pin Processor Power (JPWR1, JPWR2)

Main ATX Power Connector

The primary power connector (JPWR3) meets the ATX SSI EPS 24-pin specification. You must also connect the 8-pin (JPWR1, JPWR2) processor power connectors to your power supply.

ATX Power 24-pin Connector Pin Definitions

Pin#	Definition	Pin#	Definition
13	+3.3V	1	+3.3V
14	-12V	2	+3.3V
15	COM	3	COM
16	PS_ON	4	+5V
17	COM	5	COM
18	COM	6	+5V
19	COM	7	COM
20	Res (NC)	8	PWR_OK
21	+5V	9	5VSB
22	+5V	10	+12V
23	+5V	11	+12V
24	COM	12	+3.3V

Required Connection

Important: To provide adequate power to the motherboard, connect the 24-pin *and* the 8-pin power connectors to the power supply. Failure to do so may void the manufacturer's warranty on your power supply and motherboard.

Processor Power Connector

JPWR1 and JPWR2 must also be connected to the power supply. These connectors are used to power the processors.

+12V 8-pin Power Pin Definitions	
Pin#	Definition
1 - 4	Ground
5 - 8	+12V

Required Connection

4.2 Headers and Connectors

Fan Headers

There are eight fan headers (FAN1-6, FANA, FANB) on the motherboard. These are 4-pin fan headers; pins 1-3 are backward compatible with traditional 3-pin fans. The onboard fan speeds are controlled by Thermal Management via IPMI. When using Thermal Management setting, please use all 3-pin fans or all 4-pin fans.

Fan Header Pin Definitions	
Pin#	Definition
1	Ground (Black)
2	+12V (Red)
3	Tachometer
4	PWM Control

I-SATA 3.0 and S-SATA 3.0 Ports

SATA is supported on the X11DPi-N(T) motherboard by three iPass connectors and two SATA powered ports. The powered ports, S-SATA4/S-SATA5, are yellow connectors with power pins built in. They can be used with Supermicro SuperDOMs and do not require external power cables.

Host Fabric Interface (HFI) Carrier Card Sideband Headers (for the SKX-F CPU Only)

Two Host Fabric Interface carrier card headers are located at JHFI1/JHFI2 on the motherboard. A JHFI Sideband header is used when a SKX-F processor is installed on the motherboard. Use a Host Fabric Interface (HFI) sideband cable to connect the carrier card to the JHFI header, and use an Internal-Faceplate-to-Processor cable (IFPA54B) to connect the carrier card to the SKX-F processor to enhance system performance. Note that in a dual-processor system, JHFI1 is used for CPU1, and JHFI2 is for CPU2.

TPM Header

The JTPM1 header is used to connect a Trusted Platform Module (TPM)/Port 80, which is available from a third-party vendor. A TPM/Port 80 connector is a security device that supports encryption and authentication in hard drives. It allows the motherboard to deny access if the TPM associated with the hard drive is not installed in the system.

RAID Key Header

A RAID Key header is located at JRK1 on the motherboard. It supports VMD used in creating optional advanced NVMe RAID configurations.

SGPIO Header

The T-SGPIO3 (Serial General Purpose Input/Output) header is used to communicate with the enclosure management chip on the backplane.

SGPIO Header Pin Definitions

Pin#	Definition	Pin#	Definition
1	NC	2	NC
3	Ground	4	DATA Out
5	Load	6	Ground
7	Clock	8	NC

NC = No Connection

Standby Power

The Standby Power header is located at JSTBY1 on the motherboard. You must have a card with a Standby Power connector and a cable to use this feature.

Standby Power Pin Definitions

Pin#	Definition
1	+5V Standby
2	Ground
3	No Connection

Power SMB (I²C) Header

The Power System Management Bus (I²C) connector (JPI²C1) monitors the power supply, fan, and system temperatures.

Power SMB Header Pin Definitions	
Pin#	**Definition**
1	Clock
2	Data
3	PMBUS_Alert
4	Ground
5	+3.3V

4-pin BMC External I²C Header

A System Management Bus header for IPMI 2.0 is located at JIPMB1. Connect the appropriate cable here to use the IPMB I²C connection on your system.

External I²C Header Pin Definitions	
Pin#	**Definition**
1	Data
2	Ground
3	Clock
4	No Connection

Chassis Intrusion

A chassis Intrusion header is located at JL1 on the motherboard. Attach the appropriate cable from the chassis to alert you when the chassis is opened.

Chassis Intrusion Pin Definitions	
Pin#	**Definition**
1	Intrusion Input
2	Ground

PCIe M.2 Slot

The motherboard has one M.2 slot. See Chapter 3 for details.

Control Panel

JF1 contains header pins for various control panel connections. See the figure below for the pin locations and definitions of the control panel buttons and LED indicators.

All JF1 wires have been bundled into a single cable to simplify this connection. Make sure the red wire plugs into pin 1 as marked on the motherboard. The other end connects to the control panel PCB board.

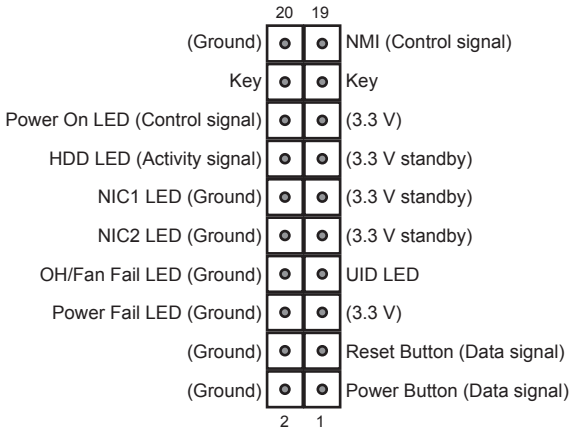


Figure 4-1. JF1: Control Panel Pins

Power Button

The Power Button connection is located on pins 1 and 2 of JF1. Momentarily contacting both pins will power on/off the system. This button can also be configured to function as a suspend button (with a setting in the BIOS--see Chapter 6). To turn off the power when the system is in suspend mode, press the button for 4 seconds or longer.

Power Button Pin Definitions (JF1)	
Pin#	**Definition**
1	Signal
2	Ground

Reset Button

The Reset Button connection is located on pins 3 and 4 of JF1. Attach it to a hardware reset switch on the computer case.

Reset Button Pin Definitions (JF1)	
Pin#	**Definition**
3	Reset
4	Ground

Power Fail LED

The Power Fail LED connection is located on pins 5 and 6 of JF1.

Power Fail LED Pin Definitions (JF1)	
Pin#	**Definition**
5	3.3V
6	PWR Supply Fail

Overheat (OH)/Fan Fail

Connect an LED cable to pins 7 and 8 of JF1 to use the Overheat/Fan Fail LED connections. The LED on pin 8 provides warnings of overheat or fan failure.

OH/Fan Fail Indicator Status	
Status	**Definition**
Off	Normal
On	Overheat
Flashing	Fan Fail

OH/Fan Fail LED Pin Definitions (JF1)	
Pin#	**Definition**
7	Blue LED
8	OH/Fan Fail LED

NIC1/NIC2 (LAN1/LAN2)

The NIC (Network Interface Controller) LED connection for LAN port 1 is located on pins 11 and 12 of JF1, and the LED connection for LAN Port 2 is on Pins 9 and 10. Attach the NIC LED cables here to display network activity.

LAN1/LAN2 LED Pin Definitions (JF1)	
Pin#	**Definition**
9	NIC2 Activity LED
10	NIC2 Link LED
11	NIC1 Activity LED
12	NIC1 Link LED

HDD LED/UID Switch

The HDD LED/UID Switch connection is located on pins 13 and 14 of JF1. Attach a cable to Pin 14 to show hard drive activity status. Attach a cable to Pin 13 to use UID switch. Refer to the table below for pin definitions.

HDD LED Pin Definitions (JF1)	
Pin#	**Definition**
13	3.3V Standby/UID Switch
14	HDD Active

Power LED

The Power LED connection is located on pins 15 and 16 of JF1.

Power LED Pin Definitions (JF1)	
Pin#	**Definition**
15	3.3V
16	Power LED

NMI Button

The non-maskable interrupt button header is located on pins 19 and 20 of JF1.

NMI Button Pin Definitions (JF1)	
Pin#	**Definition**
19	Control
20	Ground

Data Cables

The data cables in the system have been carefully routed to maintain airflow efficiency. If you disconnect any of these cables, take care to re-route them as they were originally when reconnecting them.

Important! Make sure the the cables do not come into contact with the fans.

4.3 Input/Output Ports and Interface Buttons

The rear I/O panel offers these ports and control switches.

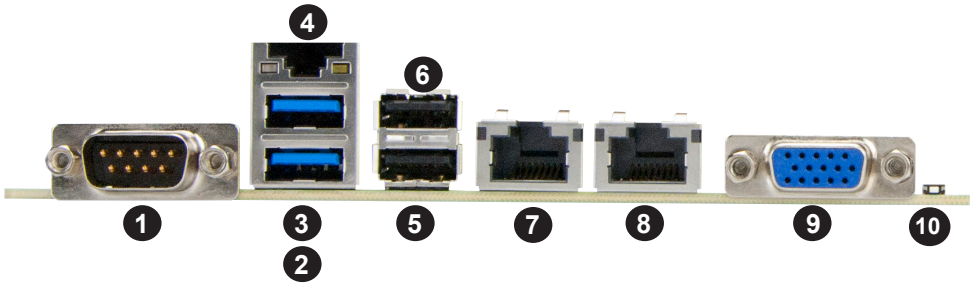


Figure 4-2. Back Panel I/O Ports

Back Panel I/O Ports			
No.	**Description**	**No.**	**Description**
1.	COM1	6.	USB 1
2.	USB 4	7.	GLAN1 (6029P-TR), 10G_LAN1 (6029P-TRT)
3.	USB 5	8.	GLAN2 (6029P-TR), 10G_LAN2 (6029P-TRT)
4.	IPMI LAN	9.	VGA
5.	USB 0	10.	Unit Identifier Switch (UID)

Serial Port

There is one COM port (COM1) on the I/O back panel and one COM header (COM2) on the motherboard.

Universal Serial Bus (USB) Ports

There are two USB 2.0 ports (USB0/1) and two USB 3.0 port (USB4/5) on the I/O back panel. There is one USB 2.0 header (USB2/3) and one USB 3.0 header (USB7/8) on the motherboard. USB6 is a Type A USB 3.0 header. The onboard headers can be used to provide front side USB access with a cable (not included).

IPMI Port

A LAN port is a dedicated connection for IPMI.

Ethernet Ports

Two Ethernet ports (LAN1, LAN2):

- X11DPi-NT supports 10GbE connections
- X11DPi-N supports 1 GbE connections

UID

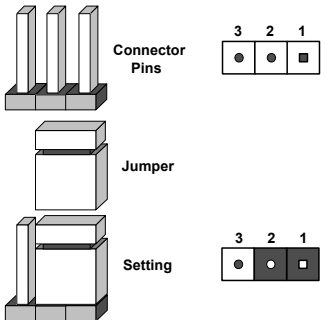
The unit identifier (UID) switch toggles the UID LED indicator on or off. This indicator can be used to identify the node for troubleshooting or service.

4.4 Jumpers

Explanation of Jumpers

To modify the operation of the motherboard, jumpers are used to choose between optional settings. Jumpers create shorts between two pins to change the function associated with it. Pin 1 is identified with a square solder pad on the printed circuit board. See the motherboard layout page for jumper locations.

Note: On a two-pin jumper, "Closed" means the jumper is on both pins and "Open" indicates the jumper is either on only one pin or has been completely removed.



CMOS Clear

JBT1 is used to clear CMOS, which will also clear any passwords. Instead of pins, this jumper consists of contact pads to prevent accidentally clearing the contents of CMOS.

To Clear CMOS

1. First power down the system and unplug the power cord(s).
2. Remove the cover of the chassis to access the motherboard.
3. Remove the onboard battery from the motherboard.
4. Short the CMOS pads with a metal object such as a small screwdriver for at least four seconds.
5. Remove the screwdriver (or shorting device).
6. Replace the cover, reconnect the power cord(s) and power on the system.

Notes: Clearing CMOS will also clear all passwords.

Do not use the PW_ON connector to clear CMOS.



LAN Port Enable/Disable

Change the setting of jumper JPL1 to enable or disable LAN ports 1 and 2. Please note that LAN1/LAN2 ports support GbE LAN connections on the X11DPi-N, and 10GbE LAN connections on the X11DPi-NT. The default setting is Enabled.

LAN Port Enable/Disable Jumper Settings	
Jumper Setting	**Definition**
Pins 1-2	Enabled
Pins 2-3	Disabled

Management Engine (ME) Recovery

Use jumper JPME1 to select ME Firmware Recovery mode, which will limit resource allocation for essential system operation only in order to maintain normal power operation and management. In the single operation mode, online upgrade will be available via Recovery mode. See the table below for jumper settings.

Manufacturer Mode Jumper Settings	
Jumper Setting	**Definition**
Pins 1-2	Normal
Pins 2-3	ME Recovery

Manufacturer Mode Select

Close pin 2 and pin 3 of jumper JPME2 to bypass SPI flash security and force the system to operate in the manufacturer mode, which will allow the user to flash the system firmware from a host server for system setting modifications. The default setting is Normal.

Manufacturer Mode Jumper Settings	
Jumper Setting	**Definition**
Pins 1-2	Normal (Default)
Pins 2-3	Manufacturer Mode

Watch Dog

JWD1 controls the Watch Dog function. Watch Dog is a monitor that can reboot the system when a software application hangs. Jumping pins 1-2 will cause Watch Dog to reset the system if an application hangs. Jumping pins 2-3 will generate a non-maskable interrupt signal for the application that hangs. Watch Dog must also be enabled in BIOS. The default setting is Reset.

Note: When Watch Dog is enabled, the user needs to write their own application software to disable it.

Watch Dog Jumper Settings

Jumper Setting	Definition
Pins 1-2	Reset
Pins 2-3	NMI
Open	Disabled

I2C Bus for VRM

Jumpers JVRM1 and JVRM2 allow the BMC or the PCH to access CPU and memory VRM controllers.

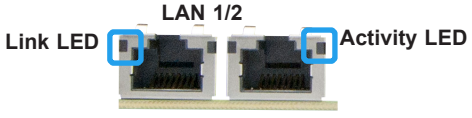
VRM Jumper Settings

Jumper Setting	Definition
Pins 1-2	BMC (Normal)
Pins 2-3	PCH

4.5 LED Indicators

LAN LEDs

The LAN ports are located on the I/O back panel on the motherboard. Each Ethernet LAN port has two LEDs. The yellow LED indicates activity. The Link LED, located on the left side of the LAN port, may be green, amber or off indicating the speed of the connection.

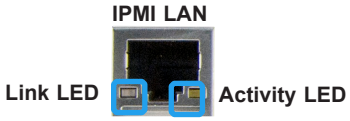


LAN Link Indicator LED Settings

LED Color	Definition
Off	No Connection, 10 or 100 Mbps
Green	10 Gbps (6029P-TRT only)
Amber	1 Gbps

IPMI LAN LED

The yellow LED indicates activity, while the green/amber LED indicates the speed of the connection.



IPMI LAN LED Link LED (left)	
LED Color	**Definition**
Amber: Solid	1 Gb/s
Green: Solid	100 Mb/s

BMC Heartbeat LED

LEDM1 is the BMC heartbeat indicator. When the LED is blinking green, BMC is functioning normally.

BMC Heartbeat LED Indicator	
LED Color	**Definition**
Green: Blinking	BMC Normal

Onboard Power LED

The Onboard Power LED is located at LE2 on the motherboard. When this LED is on, the system is on. Be sure to turn off the system and unplug the power cord before removing or installing components.

Onboard Power LED Indicator	
LED Color	**Definition**
Off	System Off (power cable not connected)
Green	System On

LED3

A power indicator is located at LED3. When this LED is on, system power is on.

Unit ID LED

A rear UID LED indicator at LE1 is located near the UID switch on the I/O back panel. The switch toggles the LED indicator to provide easy identification of a system when, for example, it may need service.

Chapter 5

Software

After the hardware has been installed, you should install the Operating System (OS), configure RAID settings and install the drivers. Necessary drivers and utilities may be found at ftp://ftp.supermicro.com/driver.

5.1 OS Installation

You must first configure RAID settings (if using RAID) before you install the Windows OS and the software drivers. To configure RAID settings, please refer to the RAID Configuration User Guides posted on our website at www.supermicro.com/support/manuals.

Installing the Windows OS for a RAID System

1. Insert Microsoft's Windows Setup DVD in the DVD drive and the system will start booting up from the DVD.
2. Insert the USB stick containing Windows drivers to a USB port on the system.
   Note: for older legacy OS's, please use a method to slipstream the drivers.
3. Select the partition on the drive in which to install Windows.
4. Browse the USB folder for the proper driver files.
5. Choose the RAID driver indicated in the Windows OS Setup screen, then choose the hard drive in which you want to install it.
6. Once all devices are specified, continue with the installation.
7. After the Windows OS installation is completed, the system will automatically reboot.

Installing Windows to a Non-RAID System

1. Insert Microsoft's Windows OS Setup DVD in the DVD-ROM drive and the system will start booting up from the DVD.
2. Continue with the installation. The Windows OS Setup screen will display.
3. From the Windows OS Setup screen, press the <Enter> key. The OS Setup will automatically load all device files and then continue with the Windows installation.
4. After the installation has completed, the system will automatically reboot.

5.2 Driver Installation

The Supermicro FTP site contains drivers and utilities for your system at ftp://ftp.supermicro.com. Some of these must be installed, such as the chipset driver.

After accessing the FTP site, go into the CDR_Images directory and locate the ISO file for your motherboard. Download this file to create a DVD of the drivers and utilities it contains. (You may also use a utility to extract the ISO file if preferred.)

After creating a DVD with the ISO files, insert the disk into the DVD drive on your system and the display shown in Figure 5-1 should appear.

Another option is to go to the Supermicro website at http://www.supermicro.com/products/. Find the product page for your motherboard here, where you may download individual drivers and utilities to your hard drive or a USB flash drive ans install from there.

Note: To install the Windows OS, please refer to the instructions posted on our website at http://www.supermicro.com/support/manuals/.

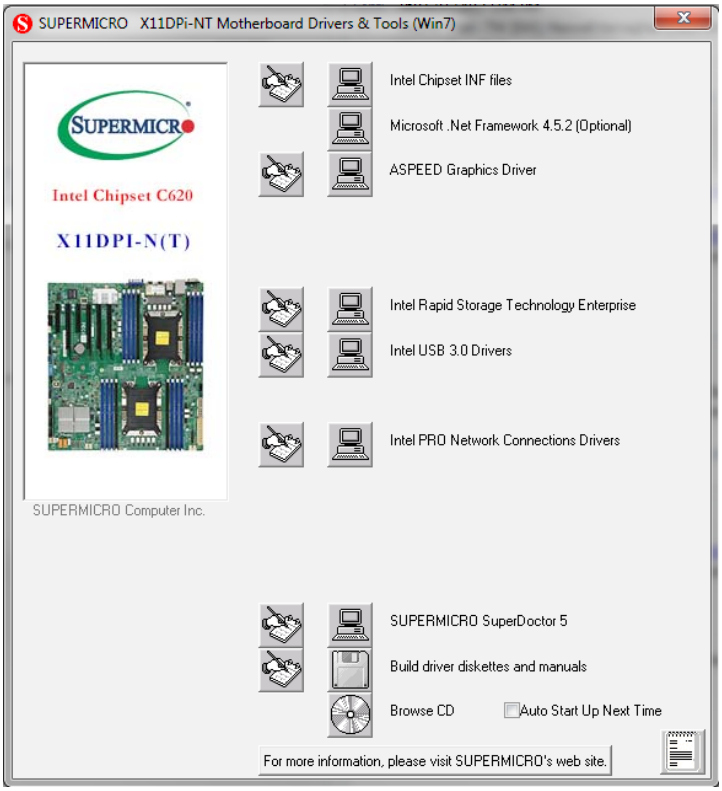


Figure 5-1. Driver & Tool Installation Screen

Note: Click the icons showing a hand writing on paper to view the readme files for each item. Click the computer icons to the right of these items to install each item (from top to the bottom) one at a time. **After installing each item, you must re-boot the system before moving on to the next item on the list.** The bottom icon with a CD on it allows you to view the entire contents.

5.3 SuperDoctor® 5

The Supermicro SuperDoctor 5 is a program that functions in a command-line or web-based interface for Windows and Linux operating systems. The program monitors such system health information as CPU temperature, system voltages, system power consumption, fan speed, and provides alerts via email or Simple Network Management Protocol (SNMP).

SuperDoctor 5 comes in local and remote management versions and can be used with Nagios to maximize your system monitoring needs. With SuperDoctor 5 Management Server (SSM Server), you can remotely control power on/off and reset chassis intrusion for multiple systems with SuperDoctor 5 or IPMI. SuperDoctor 5 Management Server monitors HTTP, FTP, and SMTP services to optimize the efficiency of your operation.

Note: The default User Name and Password for SuperDoctor 5 is ADMIN/ADMIN.



Figure 5-2. SuperDoctor 5 Interface Display Screen (Health Information)

Chapter 6

BIOS

6.1 Introduction

This chapter describes the AMI BIOS setup utility for the X11DPi-N(T) and provides the instructions on navigating the setup screens. The BIOS is stored in a Flash EEPROM and can be updated.

Note: Due to periodic changes to the BIOS, some settings may have been added or deleted since this manual was published.

Starting BIOS Setup Utility

To enter the AMI BIOS setup utility screens, press the <Delete> key while the system is booting up. (There are a few cases when other keys are used, such as <F1>, <F2>, etc.)

The BIOS screens have three main frames. The large left frame displays options can be configured by the user. These are blue. When an option is selected, it is highlighted in white. Settings printed in **Bold** are the default values.

In the left frame, a " ▶" indicates a submenu. Highlighting such an item and pressing the <Enter> key opens the list of settings in that submenu.

The upper right frame displays helpful information for the user. The AMI BIOS has default informational messages built in. The manufacturer retains the option to include, omit, or change any of these informational messages.

The lower right frame lists navigational methods. The AMI BIOS setup utility uses a key-based navigation system called *hot keys*. Most of these hot keys can be used at any time during setup navigation. These keys include <F3>, <F4>, <Enter>, <ESC>, arrow keys, etc.

Some system parameters may be changed.

6.2 Main Setup

When running the AMI BIOS setup utility, it starts with the Main screen. You can always return to it by selecting the Main tab on the top of the screen.



The Main tab page allows you to set the date and time, and it displays system information.

System Date/System Time

Use this option to change the system date and time. Highlight *System Date* or *System Time* using the arrow keys. Enter new values using the keyboard. Press the <Tab> key or the arrow keys to move between fields. The date must be entered in MM/DD/YYYY format. The time is entered in HH:MM:SS format.

Note: The time is in the 24-hour format. For example, 5:30 P.M. appears as 17:30:00. The date's default value is 01/01/2016 after RTC reset.

Supermicro X11DPi-N/X11DPi-NT (Motherboard model)

BIOS Version

Build Date (of the BIOS)

CPLD (Complex Programmable Logic Device) **Version**

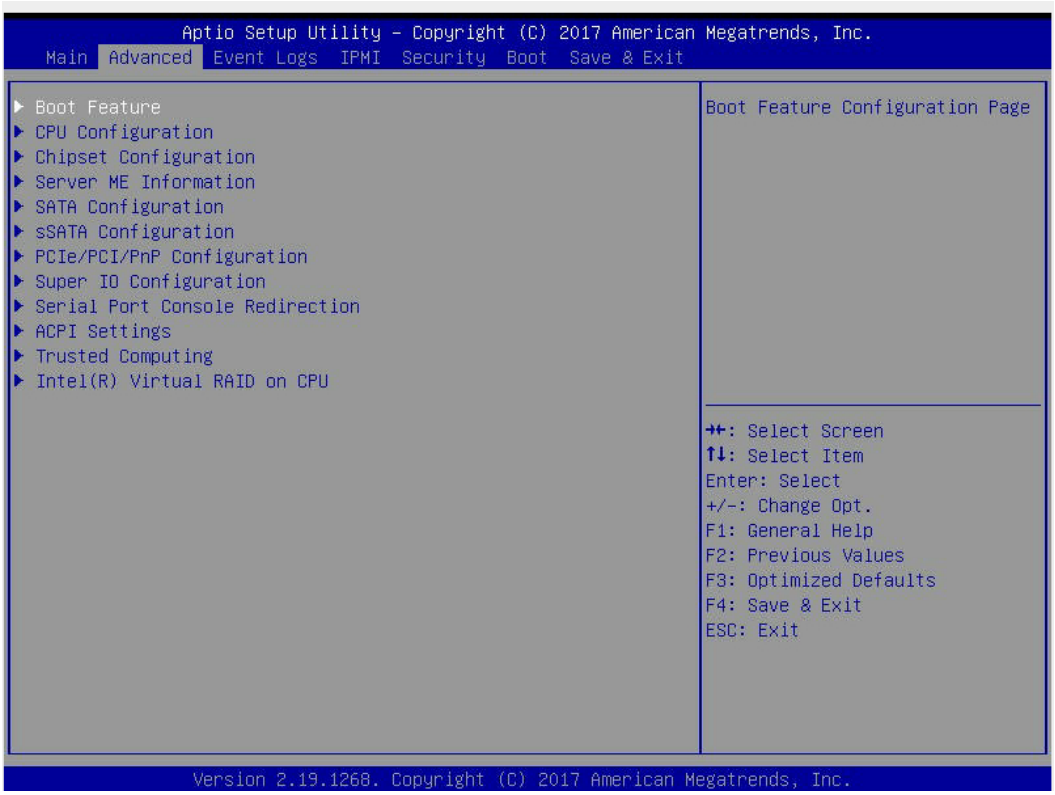
Memory Information

Total Memory (for the system)

Memory Speed

6.3 Advanced Setup Configurations

Use the arrow keys to select the Advanced tab and press <Enter> to access the submenu items.



Caution: Take caution when changing the Advanced settings. An incorrect value, a very high DRAM frequency, or an incorrect DRAM timing setting may make the system unstable. If this occurs, revert to the manufacture default settings.

▸Boot Configuration

Quiet Boot

Use this feature to select the screen between displaying POST messages or the OEM logo at bootup. Select Disabled to display the POST messages. Select Enabled to display the OEM logo instead of the normal POST messages. The options are **Enabled** and Disabled.

Note: POST message is always displayed regardless of the item setting.

CSM (Compatibility Support Module) Support

Select Enabled to enable CSM booting support which will allow a UEFI (Unified Expansible Firmware Interface)-compatible device to boot from a system that uses a legacy BIOS ROM. The options are **Enabled** and Disabled.

Option ROM Messages

Use this feature to set the display mode for the Option ROM. Select Keep Current to use the current AddOn ROM display setting. Select Force BIOS to use the Option ROM display mode set by the system BIOS. The options are **Force BIOS** and Keep Current.

Bootup NumLock State

Use this feature to set the Power-on state for the Numlock key. The options are Off and **On**.

Wait For 'F1' If Error

Select Enabled to force the system to wait until the 'F1' key is pressed if an error occurs. The options are Disabled and **Enabled**.

Interrupt 19 Capture

Interrupt 19 is the software interrupt that handles the boot disk function. When this item is set to Immediate, the ROM BIOS of the host adaptors will "capture" Interrupt 19 at bootup immediately and allow the drives that are attached to these host adaptors to function as bootable disks. If this item is set to Postponed, the ROM BIOS of the host adaptors will not capture Interrupt 19 immediately and allow the drives attached to these adaptors to function as bootable devices at bootup. The options are **Immediate** and Postponed.

Re-try Boot

When EFI (Expansible Firmware Interface) Boot is selected, the system BIOS will automatically reboot the system from an EFI boot device after an initial boot failure. Select Legacy Boot to allow the BIOS to automatically reboot the system from a Legacy boot device after an initial boot failure. The options are **Disabled**, Legacy Boot, and EFI Boot.

Power Configuration

Watch Dog Function

Select Enabled to allow the Watch Dog timer to reboot the system when it is inactive for more than 5 minutes. The options are Enabled and **Disabled.**

Power Button Function

This feature controls how the system shuts down when the power button is pressed. Select 4 Seconds Override for the user to power off the system after pressing and holding the power button for 4 seconds or longer. Select Instant Off to instantly power off the system as soon as the user presses the power button. The options are 4 Seconds Override and **Instant Off.**

Restore on AC Power Loss

Use this feature to set the power state after a power outage. Select Power-Off for the system power to remain off after a power loss. Select Power-On for the system power to be turned on after a power loss. Select Last State to allow the system to resume its last power state before a power loss. The options are Power-On, Stay-Off and **Last State**.

▶CPU Configuration

Warning: Setting the wrong values in the following sections may cause the system to malfunction.

▶Processor Configuration

The following CPU information will be displayed:

- Processor BSP Revision
- Processor Socket
- Processor ID
- Processor Frequency
- Processor Max Ratio
- Processor Min Ratio
- Microcode Revision
- L1 Cache RAM
- L2 Cache RAM
- L3 Cache RAM
- Processor 0 Version
- Processor 1 Version

Hyper-Threading (ALL)

Select Enable to use Intel Hyper-Threading Technology to enhance CPU performance. The options are **Enable** and Disable.

Execute Disable Bit (Available if supported by the OS & the CPU)

Select Enable to enable Execute Disable Bit support which will allow the processor to designate areas in the system memory where an application code can execute and where it cannot, thus preventing a worm or a virus from flooding illegal codes to overwhelm the processor, damaging the system during a virus attack. The options are **Enable** and Disable. (Refer to Intel and Microsoft websites for more information.)

Intel Virtualization Technology

Select Enable to use Intel Virtualization Technology which will allow the I/O device assignments to be directly reported to the VMM (Virtual Memory Management) through the DMAR ACPI tables. This feature offers fully-protected I/O resource-sharing across the Intel platforms, providing the user with greater reliability, security and availability in networking and data-sharing. The settings are **Enable** and Disable.

PPIN Control

Select Unlock/Enable to use the Protected-Processor Inventory Number (PPIN) in the system. The options are **Unlock/Enable** and Unlock/Disable.

Hardware Prefetcher (Available when supported by the CPU)

If this feature is set to Enable, the hardware prefetcher will prefetch streams of data and instructions from the main memory to the Level 2 (L2) cache to improve CPU performance. The options are Disable and **Enable**.

Adjacent Cache Prefetch (Available when supported by the CPU)

Select Enable for the CPU to prefetch both cache lines for 128 bytes as comprised. Select Disable for the CPU to prefetch both cache lines for 64 bytes. The options are Disable and **Enable**.

> **Note**: Please power off and reboot the system for the changes you've made to take effect. Please refer to Intel's website for detailed information.

DCU Streamer Prefetcher (Available when supported by the CPU)

If this item is set to Enable, the DCU (Data Cache Unit) streamer prefetcher will prefetch data streams from the cache memory to the DCU (Data Cache Unit) to speed up data accessing and processing for CPU performance enhancement. The options are Disable and **Enable**.

DCU IP Prefetcher

If this item is set to Enable, the IP prefetcher in the DCU (Data Cache Unit) will prefetch IP addresses to improve network connectivity and system performance. The options are **Enable** and Disable.

LLC Prefetch

If this feature is set to Enable, LLC (hardware cache) prefetching on all threads will be supported. The options are **Disable** and Enable.

Extended APIC (Extended Advanced Programmable Interrupt Controller)

Based on the Intel Hyper-Threading technology, each logical processor (thread) is assigned 256 APIC IDs (APIDs) in 8-bit bandwidth. When this feature is set to Enable, the APIC ID will be expanded from 8 bits to 16 bits to provide 512 APIDs to each thread to enhance CPU performance. The options are **Disable** and Enable.

AES-NI

Select Enable to use the Intel Advanced Encryption Standard (AES) New Instructions (NI) to ensure data security. The options are **Enable** and Disable.

▶Advanced Power Management Configuration

▶CPU P State Control

SpeedStep (PStates)

EIST (Enhanced Intel SpeedStep Technology) allows the system to automatically adjust processor voltage and core frequency in an effort to reduce power consumption and heat dissipation. Please refer to Intel's website for detailed information. The options are Disable and **Enable**.

EIST PSD Function (Available when SpeedStep is set to Enable)

Use this item to configure the processor's P-State coordination settings. During a P-State, the voltage and frequency of the processor will be reduced when it is in operation. This makes the processor more energy efficient, resulting in further energy gains. The options are **HW_ALL**, SW_ALL and SW-ANY.

Turbo Mode (Available when SpeedStep is set to Enable)

Select Enable for processor cores to run faster than the frequency specified by the manufacturer. The options are Disable and **Enable**.

▶Hardware PM (Power Management) State Control

Hardware P-States

If this feature is set to Disable, hardware will choose a P-state setting for the system based on an OS request. If this feature is set to Native Mode, hardware will choose a P-state setting based on OS guidance. If this feature is set to Native Mode with No Legacy Support, hardware will choose a P-state setting independently without OS guidance. The options are **Disable**, Native Mode, Out of Band Mode, and Native Mode with No Legacy Support.

▶CPU C State Control

Autonomous Core C-State

Select Enable to support Autonomous Core C-State control which will allow the processor core to control its C-State setting automatically and independently. The options are Enable and **Disable**.

CPU C6 Report

Select Enable to allow the BIOS to report the CPU C6 state (ACPI C3) to the operating system. During the CPU C6 state, power to all caches is turned off. The options are **Auto**, Enable, and Disable.

Enhanced Halt State (C1E)

Select Enable to enable "Enhanced Halt State" support, which will significantly reduce the CPU's power consumption by minimizing CPU's clock cycles and reduce voltage during a "Halt State." The options are Disable and **Enable**.

▶Package C State Control

Package C State

Use this feature to set the limit on the C-State package register. The options are C0/1 state, C2 state, C6 (non-Retention) state, C6 (Retention) state, No Limit, and **Auto**.

▶Chipset Configuration

Warning: Setting the wrong values in the following sections may cause the system to malfunction.

▶North Bridge

This feature allows the user to configure the settings for the Intel North Bridge.

▶UPI (Ultra Path Interconnect) Configuration

This section displays the following UPI General Configuration information:

- Number of CPU
- Number of IIO
- Current UPI Link Speed
- Current UPI Link Frequency
- UPI Global MMIO Low Base/Limit
- UPI Global MMIO High Base/Limit
- UPI PCI-E Configuration Base/Size

Degrade Precedence

Use this feature to select the degrading precedence option for Ultra Path Interconnect connections. Select Topology Precedent to degrade UPI features if system options are in conflict. Select Feature Precedent to degrade UPI topology if system options are in conflict. The options are **Topology Precedence** and Feature Precedence.

Link L0p Enable

Select Enable to enable Link L0p. The options are Disable, Enable, and **Auto**.

Link L1 Enable

Select Enable to enable Link L1 (Level 1 link). The options are Disable, Enable, and **Auto**.

IO Directory Cache

Select Enable for the IODC (I/O Directory Cache) to generate snoops instead of generating memory lockups for remote IIO (InvITоM) and/or WCiLF (Cores). Select Auto for the IODC to generate snoops (instead of memory lockups) for WCiLF (Cores). The options are Disable, **Auto**, Enable for Remote InvItoM Hybrid Push, InvItoM AllocFlow, Enable for Remote InvItoM Hybrid AllocNonAlloc, and Enable for Remote InvItoM and Remote WViLF.

Isoc Mode

Select Enable to enable Isochronous support to meet QoS (Quality of Service) requirements. This feature is especially important for Virtualization Technology. The options are Disable, Enable, and **Auto**.

▶Memory Configuration

Enforce POR

Select POR to enforce POR restrictions for DDR4 memory frequency and voltage programming. The options are **POR** and Disable.

Memory Frequency

Use this feature to set the maximum memory frequency for onboard memory modules. The options are **Auto**, 1866, 2000, 2133, 2200, 2400, 2600, and 2666.

Data Scrambling for NVDIMM

Select Enable to enable data scrambling for onboard NVDIMM memory to enhance system performance and security. The options are **Auto**, Disable, and Enable.

Data Scrambling for DDR4

Select Enable to enable data scrambling for DDR4 memory to enhance system performance and security. The options are **Auto**, Disable, and Enable.

tCCD_L Relaxation

If this feature is set to Enable, SPD (Serial Presence Detect) will override tCCD_L ("Column to Column Delay-Long", or “Command to Command Delay-Long” on the column side.) If this feature is set to Disable, tCCD_L will be enforced based on the memory frequency. The options are Enable and **Disable**.

Enable ADR

Select Enable for ADR (Automatic Diagnostic Repository) support to enhance memory performance. The options are Enable and **Disable**.

▶Memory Topology

This item displays the information of onboard memory modules as detected by the BIOS.

- P1 DIMMA1
- P1 DIMMB1
- P2 DIMMA1
- P2 DIMMB1

▶Memory RAS (Reliability_Availability_Serviceability) Configuration

Use this submenu to configure the following Memory RAS settings.

Static Virtual Lockstep Mode

Select Enable to support Static Virtual Lockstep mode to enhance memory performance. The options are Enable and **Disable**.

Mirror Mode

Select Enable to set all 1LM/2LM memory installed in the system on the mirror mode, which will create a duplicate copy of data stored in the memory to increase memory security, but it will reduce the memory capacity into half. The options are Enable and **Disable**.

Memory Rank Sparing

Select Enable to support memory-rank sparing to optimize memory performance. The options are Enable and **Disable**.

Note: This item will not be available when memory mirror mode is enabled.

Memory Correctable Error Threshold

Use this item to enter the threshold value for correctable memory errors. The default setting is 10.

SDDC

Select Enable for SDDC (Single Device Data Correction) support, which will increase the reliability and serviceability of your system memory. The options are Enable and **Disable**.

ADDDC (Adaptive Double Device Data Correction) Sparing

Select Enable for ADDDC sparing support to enhance memory performance. The options are Enable and **Disable**.

Patrol Scrub

Patrol Scrubbing is a process that allows the CPU to correct correctable memory errors detected in a memory module and send the corrections to the requestor (the original source). When this item is set to Enable, the IO hub will read and write back one cache line every 16K cycles if there is no delay caused by internal processing. By using this method,

roughly 64 GB of memory behind the IO hub will be scrubbed every day. The options are **Enable** and Disable.

Patrol Scrub Interval

Use this item to specify the number of hours (between 0 to 24) required for the system to complete a full patrol scrubbing. Enter 0 for patrol scrubbing to be performed automatically. The default setting is **24**.

Note: This item is hidden when Patrol Scrub item is set to Disable.

▶IIO Configuration

EV DFX (Device Function On-Hide) Features

When this feature is set to Enable, the EV_DFX Lock Bits that are located in a processor will always remain clear during electric tuning. The options are **Disable** and Enable.

▶CPU1 Configuration/CPU2 Configuration

IOU0 (IIO PCIe Br1)

This item configures the PCI-E Bifuraction setting for a PCI-E port specified by the user. The options are x4x4x4x4, x4x4x8, x8x4x4, x8x8, x16, and **Auto**.

IOU1 (IIO PCIe Br2)

This item configures the PCI-E Bifuraction setting for a PCI-E port specified by the user. The options are x4x4x4x4, x4x4x8, x8x4x4, x8x8, x16, and **Auto**.

IOU2 (IIO PCIe Br3)

This item configures the PCI-E Bifuraction setting for a PCI-E port specified by the user. The options are x4x4x4x4, x4x4x8, x8x4x4, x8x8, x16, and **Auto**.

MCP0 (IIO PCIe Br4)

This item configures the PCI-E Bifuraction setting for a PCI-E port specified by the user. The options are x16 and **Auto**.

MCP1 (IIO PCIe Br5)

This item configures the PCI-E Bifuraction setting for a PCI-E port specified by the user. The options are x16 and **Auto**.

▶Socket 0 PCI-E Br0D00F0 - Port 0/DMI (Available for CPU 1 Configuration only)

Link Speed

This item configures the link speed of a PCI-E port specified by the user. The options are **Auto**, Gen 1 (Generation 1) (2.5 GT/s), Gen 2 (Generation 2) (5 GT/s), and Gen 3 (Generation 3) (8 GT/s)

The following information will be displayed as well:

- PCI-E Port Link Status

- PCI-E Port Link Max
- PCI-E Port Link Speed

PCI-E Port Max (Maximum) Payload Size (Available for CPU 1 Configuration only)

Select Auto for the system BIOS to automatically set the maximum payload value for a PCI-E device specified by to user to enhance system performance. The options are **Auto**, 128B, and 256B.

▶IOAT Configuration

Disable TPH (TLP Processing Hint)

TPH is used for data-tagging with a destination ID and a few important attributes. It can send critical data to a particular cache without writing through to memory. Select No in this item for TLP Processing Hint support, which will allow a "TPL request" to provide "hints" to help optimize the processing of each transaction occurred in the target memory space. The options are Yes and **No**.

Prioritize TPH (TLP Processing Hint)

Select Yes to prioritize the TPL requests that will allow the "hints" to be sent to help facilitate and optimize the processing of certain transactions in the system memory. The options are Enable and **Disable**.

Relaxed Ordering

Select Enable to enable Relaxed Ordering support which will allow certain transactions to violate the strict-ordering rules of PCI and to be completed prior to other transactions that have already been enqueued. The options are **Disable** and Enable.

▶Intel VT for Directed I/O (VT-d)

Intel VT for Directed I/O (VT-d)

Intel VT for Directed I/O (VT-d)

Select Enable to use Intel Virtualization Technology support for Direct I/O VT-d by reporting the I/O device assignments to the VMM (Virtual Machine Monitor) through the DMAR ACPI tables. This feature offers fully-protected I/O resource sharing across Intel platforms, providing greater reliability, security and availability in networking and data-sharing. The options are **Enable** and Disable.

Interrupt Remapping

Select Enable for Interrupt Remapping support to enhance system performance. The options are **Enable** and Disable.

PassThrough DMA

Select Enable for the Non-Iscoh VT-d engine to pass through DMA (Direct Memory Access) to enhance system performance. The options are **Enable** and Disable.

ATS

Select Enable to enable ATS (Address Translation Services) support for the Non-Iscoh VT-d engine to enhance system performance. The options are **Enable** and Disable.

Posted Interrupt

Select Enable to support VT_D Posted Interrupt which will allow external interrupts to be sent directly from a direct-assigned device to a client machine in non-root mode to improve virtualization efficiency by simplifying interrupt migration and lessening the need of physical interrupts. The options are **Enable** and Disable.

Coherency Support (Non-Isoch)

Select Enable for the Non-Iscoh VT-d engine to pass through DMA (Direct Memory Access) to enhance system performance. The options are **Enable** and Disable.

▶Intel VMD Technology

▶Intel VMD for Onboard NVMe

VMD Configuration Onboard NVMe

Onboard NVMe Mode
Select Legacy Mode for the onboard NVMe devices to support Legacy Mode. The options are **Legacy Mode** and the VMD Mode.

IIO-PCIE Express Global Options

The section allows the user to configure the following PCI-E global options:

PCE-E Hot Plug

Select Enable to support Hot-plugging for the selected PCI-E slots which will allow the user to replace the devices installed in the slots without shutting down the system. The options are **Enable** and Disabled.

PCI-E Completion Timeout (Global)

Use this item to select the PCI-E Completion Time-out settings. The options are **Yes**, No, and Per-Port.

▶South Bridge

The following South Bridge information will display:

- USB Module Version
- USB Devices

Legacy USB Support

Select Enabled to support onboard legacy USB devices. Select Auto to disable legacy support if there are no legacy USB devices present. Select Disable to have all USB devices available for EFI applications only. The options are **Enabled,** Disabled and Auto.

XHCI Hand-Off

This is a work-around solution for operating systems that do not support XHCI (Extensible Host Controller Interface) hand-off. The XHCI ownership change should be claimed by the XHCI driver. The options are Enabled and **Disabled**.

Port 60/64 Emulation

Select Enabled for I/O port 60h/64h emulation support, which in turn, will provide complete legacy USB keyboard support for the operating systems that do not support legacy USB devices. The options are **Enabled** and Disabled.

Port 61h Bit-4 Emulation

Select Enabled for I/O Port 61h-Bit 4 emulation support to enhance system performance. The options are Enabled and **Disabled**.

Install Windows 7 USB Support

Select Enabled to install the Windows 7 USB utility to support legacy USB devices for Windows 7 systems. The options are Enabled and **Disabled**.

▶Server ME (Management Engine) Configuration

This feature displays the following system ME configuration settings.

Operational Firmware Version

Backup Firmware Version

Recovery Firmware Version

ME Firmware Status #1

ME Firmware Status #2

Current State

Error Code

▶SATA Configuration

When this submenu is selected, the AMI BIOS automatically detects the presence of the SATA devices that are supported by the Intel PCH chip and displays the following items:

SATA Controller

This item enables or disables the onboard SATA controller supported by the Intel PCH chip. The options are **Enable** and Disable.

Configure SATA as (Available when the item above: SATA Controller is set to enabled)

Select AHCI to configure a SATA drive specified by the user as an AHCI drive. Select RAID to configure a SATA drive specified by the user as a RAID drive. The options are **AHCI** and RAID. (**Note:** This item is hidden when the SATA Controller item is set to Disabled.)

SATA HDD Unlock

Select Enable to unlock SATA HDD password in the OS. The options are **Enable** and Disable.

SATA/sSATA RAID Boot Select (Available when the item "Configure SATA as" is set to "RAID")

This feature allows the user to decide which controller should be used for system boot. The options are None, SATA Controller, **sSATA Controller**, and Both.

Aggressive Link Power Management

When this item is set to Enabled, the SATA AHCI controller manages the power use of the SATA link. The controller will put the link in a low power mode during an extended period of I/O inactivity, and will return the link to an active state when I/O activity resumes. The options are Enable and **Disable**.

SATA RAID Option ROM/UEFI Driver (Available when the item "Configure SATA as" is set to "RAID")

Select EFI to load the EFI driver for system boot. Select Legacy to load a legacy driver for system boot. The options are Disable, EFI, and **Legacy**.

SATA Port 0 - SATA Port 7

Hot Plug

Select Enable to support Hot-plugging for the device installed on a selected SATA port which will allow the user to replace the device installed in the slot without shutting down the system. The options are Enable and **Disabled**.

Spin Up Device

On an edge detect from 0 to 1, set this item to allow the SATA device installed on the SATA port specified by the user to start a COMRESET initialization. The options are Enable and **Disable**.

SATA Device Type

Use this item to specify if the device installed on the SATA port selected by the user should be connected to a Solid State drive or a Hard Disk Drive. The options are **Hard Disk Drive** and Solid State Drive.

▶sSATA Configuration

When this submenu is selected, AMI BIOS automatically detects the presence of the sSATA devices that are supported by the sSATA controller and displays the following items:

sSATA Controller

This item enables or disables the onboard sSATA controller supported by the Intel SCU. The options are **Enable** and Disable.

Configure sSATA as

Select AHCI to configure an sSATA drive specified by the user as an AHCI drive. Select RAID to configure an sSATA drive specified by the user as a RAID drive. The options are **AHCI** and RAID. (**Note:** This item is hidden when the sSATA Controller item is set to Disabled.)

SATA HDD Unlock

Select Enable to unlock sSATA HDD password in the OS. The options are **Enable** and Disable.

SATA/sSATA RAID Boot Select (Available when the item "Configure SATA as" is set to "RAID")

This feature allows the user to decide which controller should be used for system boot. The options are None, SATA Controller, **sSATA Controller**, and Both.

Support Aggressive Link Power Management

When this item is set to Enable, the sSATA AHCI controller manages the power use of the SATA link. The controller will put the link in a low power mode during an extended period of I/O inactivity, and will return the link to an active state when I/O activity resumes. The options are **Disable** and Enable.

sSATA RAID Option ROM/UEFI Driver (Available when the item "Configure SATA as" is set to "RAID")

Select EFI to load the EFI driver for system boot. Select Legacy to load a legacy driver for system boot. The options are Disable, EFI, and **Legacy**.

sSATA Port 0 - sSATA Port 5

Hot Plug

Select Enable to support Hot-plugging for the device installed on an sSATA port selected by the user which will allow the user to replace the device installed in the slot without shutting down the system. The options are **Disable** and Enabled.

Spin Up Device

On an edge detect from 0 to 1, set this item to allow the sSATA device installed on the sSATA port specified by the user to start a COMRESET initialization. The options are Enable and **Disable**.

sSATA Device Type

Use this item to specify if the device installed on the sSATA port specified by the user should be connected to a Solid State drive or a Hard Disk Drive. The options are **Hard Disk Drive** and Solid State Drive.

▶PCIe/PCI/PnP Configuration

The following PCI information will be displayed:

- PCI Bus Driver Version
- PCI Devices Common Settings:

Above 4G Decoding (Available if the system supports 64-bit PCI decoding)

Select Enabled to decode a PCI device that supports 64-bit in the space above 4G Address. The options are **Enabled** and Disabled.

SR-IOV Support (Available if the system supports Single-Root Virtualization)

Select Enabled for Single-Root IO Virtualization support. The options are Enabled and **Disabled.**

MMIOHBase

Use this item to select the base memory size according to memory-address mapping for the IO hub. The base memory size must be between 4032G to 4078G. The options are **56T**, 48T, 24T, 16T, 4T, and 1T.

MMIO High Granularity Size

Use this item to select the high memory size according to memory-address mapping for the IO hub. The options are 1G, 4G, 16G, 64G, **256G**, and 1024G.

PCI PERR/SERR Support

Use this feature to enable or disable the runtime event for SERR (System Error)/ PERR (PCI/ PCI-E Parity Error). The options are Disabled and **Enabled**.

Maximum Read Request

Select Auto for the system BIOS to automatically set the maximum size for a read request for a PCI-E device to enhance system performance. The options are **Auto**, 128 Bytes, 256 Bytes, 512 Bytes, 1024 Bytes, 2048 Bytes, and 4096 Bytes.

MMCFG Base

This feature determines the lowest MMCFG (Memory-Mapped Configuration) base assigned to PCI devices. The options are 1G, 1.5G, 1.75G. **2G**, 2.25G, and 3G.

VGA Priority

Use this item to select the graphics device to be used as the primary video display for system boot. The options are Auto, **Onboard** and Offboard.

PCI Devices Option ROM Settings

Onboard NVME1/NVME2 OPROM

Select EFI to allow the user to boot the computer using an EFI (Expansible Firmware Interface) device installed on the NVME connector specified by the user. Select Legacy to allow the user to boot the computer using a legacy device installed on the NVME connector specified by the user. The options are Disabled, Legacy and **EFI**.

CPU1 Slot 1 PCI-E x8 OPROM/CPU1 Slot 2 PCI-E x16 OPROM/CPU1 Slot 3 PCI-E x8 OPROM/CPU2 Slot 4 PCI-E x16 OPROM/CPU2 Slot 5 PCI-E x16 OPROM/CPU2 Slot 6 PCI-E x16 OPROM/

Select EFI to allow the user to boot the computer using an EFI (Expansible Firmware Interface) device installed on the PCI-E slot specified by the user. Select Legacy to allow the user to boot the computer using a legacy device installed on the PCI-E slot specified by the user. The options are Disabled, **Legacy** and EFI. (**Note:** Riser card names may differ in each system.)

Onboard Video Option ROM

Use this feature to select the Onboard Video Option ROM type. The options are Disabled, **Legacy** and EFI.

Onboard LAN1 Option ROM

Use this feature to select the type of device installed in LAN Port1 used for system boot. The options are **Legacy**, EFI and Disabled.

Onboard LAN2 Option ROM

Use this feature to select the type of device installed in LAN Port2 used for system boot. The options are Legacy, EFI and **Disabled**.

▶Network Stack Configuration

Network Stack

Select Enabled to enable PXE (Preboot Execution Environment) or UEFI (Unified Extensible Firmware Interface) for network stack support. The options are **Enabled** and Disabled.

If "Network Stack" is set to Enabled, the following items will display:

Ipv4 PXE Support

Select Enabled to enable Ipv4 PXE boot support. If this feature is disabled, it will not create the Ipv4 PXE boot option. The options are Disabled and **Enabled**.

Ipv4 HTTP Support

Select Enabled to enable Ipv4 HTTP boot support. If this feature is disabled, it will not create the Ipv4 HTTP boot option. The options are Enabled and **Disabled**.

Ipv6 PXE Support

Select Enabled to enable Ipv6 PXE boot support. If this feature is disabled, it will not create the Ipv6 PXE boot option. The options are Disabled and **Enabled**.

Ipv6 HTTP Support

Select Enabled to enable Ipv6 HTTP boot support. If this feature is disabled, it will not create the Ipv6 HTTP boot option. The options are Enabled and **Disabled**.

PXE Boot Wait Time

Use this feature to select the wait time to press the <ESC> key to abort the PXE boot. The default is **0**.

Media Detect Time

Use this feature to select the wait time in seconds for the BIOS ROM to detect the LAN media (Internet connection or LAN port). The default is 1.

▶Super IO Configuration

Super IO Chip AST2500

▶Serial Port 1 Configuration

Serial Port

Select Enabled to enable the onboard serial port specified by the user. The options are **Enabled** and Disabled.

Device Settings

This item displays the base I/O port address and the Interrupt Request address of a serial port specified by the user.

Note: This item is hidden when Serial Port 1 is set to Disabled.

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 1. Select **Auto** for the BIOS to automatically assign the base I/O and IRQ address to a serial port specified.

The options for Serial Port 1 are **Auto**, (IO=3F8h; IRQ=4), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12); (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

▶Serial Port 2 Configuration

Serial Port

Select Enabled to enable the onboard serial port specified by the user. The options are **Enabled** and Disabled.

Device Settings

This item displays the base I/O port address and the Interrupt Request address of a serial port specified by the user.

Note: This item is hidden when Serial Port 1 is set to Disabled.

Change Settings

This feature specifies the base I/O port address and the Interrupt Request address of Serial Port 2. Select Auto for the BIOS to automatically assign the base I/O and IRQ address to a serial port specified. The options for Serial Port 2 are **Auto**, (IO=2F8h; IRQ=3), (IO=3F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), (IO=2F8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12); (IO=3E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12), and (IO=2E8h; IRQ=3, 4, 5, 6, 7, 9, 10, 11, 12).

Serial Port 2 Attribute

Select SOL to use COM Port 2 as a Serial_Over_LAN (SOL) port for console redirection. The options are COM and **SOL**.

▶Serial Port Console Redirection

COM 1 Console Redirection

Select Enabled to enable COM Port 1 for Console Redirection, which will allow a client machine to be connected to a host machine at a remote site for networking. The options are Enabled and **Disabled**.

**If the item above set to Enabled, the following items will become available for configuration:*

▶Console Redirection Settings (for COM1)

Terminal Type

Use thid feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are ANSI, VT100, **VT100+**, and VT-UTF8.

Bits Per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600 and **115200** (bits per second).

Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 (Bits) and **8 (Bits)**.

Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark and Space.

Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start sending data when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are **Enabled** and Disabled**.**

Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

Legacy OS Redirection Resolution

Use this feature to select the number of rows and columns used in Console Redirection for legacy OS support. The options are **80x24** and 80x25.

Putty KeyPad

This feature selects Function Keys and KeyPad settings for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SCO, ESCN, and VT400.

Redirection After BIOS Post

Use this feature to enable or disable legacy Console Redirection after BIOS POST. When the option-Bootloader is selected, legacy Console Redirection is disabled before booting the OS. When the option-Always Enable is selected, legacy Console Redirection remains enabled upon OS bootup. The options are **Always Enable** and Bootloader.

SOL (Serial-Over-LAN)/COM2

Console Redirection (for SOL/COM2)

Select Enabled to use the SOL port for Console Redirection. The options are **Enabled** and Disabled.

**If the item above set to Enabled, the following items will become available for user's configuration:*

▶Console Redirection Settings (for SOL/COM2)

Use this feature to specify how the host computer will exchange data with the client computer, which is the remote computer used by the user.

Terminal Type

Use this feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII Character set. Select VT100+ to add color and function key support. Select ANSI to use the Extended ASCII Character Set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are ANSI, VT100, **VT100+**, and VT-UTF8.

Bits Per second

Use this feature to set the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in the host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 38400, 57600 and **115200** (bits per second).

Data Bits

Use this feature to set the data transmission size for Console Redirection. The options are 7 (Bits) and **8 (Bits)**.

Parity

A parity bit can be sent along with regular data bits to detect data transmission errors. Select Even if the parity bit is set to 0, and the number of 1's in data bits is even. Select

Odd if the parity bit is set to 0, and the number of 1's in data bits is odd. Select None if you do not want to send a parity bit with your data bits in transmission. Select Mark to add a mark as a parity bit to be sent along with the data bits. Select Space to add a Space as a parity bit to be sent with your data bits. The options are **None**, Even, Odd, Mark and Space.

Stop Bits

A stop bit indicates the end of a serial data packet. Select 1 Stop Bit for standard serial data communication. Select 2 Stop Bits if slower devices are used. The options are **1** and 2.

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop sending data when the receiving buffer is full. Send a "Start" signal to start data-sending when the receiving buffer is empty. The options are **None** and Hardware RTS/CTS.

VT-UTF8 Combo Key Support

Select Enabled to enable VT-UTF8 Combination Key support for ANSI/VT100 terminals. The options are **Enabled** and Disabled**.**

Recorder Mode

Select Enabled to capture the data displayed on a terminal and send it as text messages to a remote server. The options are **Disabled** and Enabled.

Resolution 100x31

Select Enabled for extended-terminal resolution support. The options are Disabled and **Enabled**.

Legacy OS Redirection Resolution

Use this feature to select the number of rows and columns used in Console Redirection for legacy OS support. The options are **80x24** and 80x25.

Putty KeyPad

This feature selects Function Keys and KeyPad settings for Putty, which is a terminal emulator designed for the Windows OS. The options are **VT100**, LINUX, XTERMR6, SCO, ESCN, and VT400.

Redirection After BIOS Post

Use this feature to enable or disable legacy Console Redirection after BIOS POST (Power-On Self-Test). When this feature is set to Bootloader, legacy Console Redirection is disabled before booting the OS. When this feature is set to Always Enable, legacy Console Redirection remains enabled upon OS boot. The options are **Always Enable** and Bootloader.

▶Legacy Console Redirection Settings

Legacy Console Redirection Settings

Use the feature to select the COM port to display redirection of Legacy OS and Legacy OPROM messages. The default setting is **COM1**.

Serial Port for Out-of-Band Management/Windows Emergency Management Services (EMS)

The submenu allows the user to configure Console Redirection settings to support Out-of-Band Serial Port management.

Console Redirection (for EMS)

Select Enabled to use a COM port selected by the user for EMS Console Redirection. The options are **Disabled** and Enabled.

**If the item above set to Enabled, the following items will become available for user's configuration:*

▶EMS Console Redirection Settings

Out-of-Band Management Port

The feature selects a serial port in a client server to be used by the Windows Emergency Management Services (EMS) to communicate with a remote host server. The options are **COM1 (Console Redirection)** and COM2/SOL (Console Redirection).

Terminal Type

Use this feature to select the target terminal emulation type for Console Redirection. Select VT100 to use the ASCII character set. Select VT100+ to add color and function key support. Select ANSI to use the extended ASCII character set. Select VT-UTF8 to use UTF8 encoding to map Unicode characters into one or more bytes. The options are ANSI, VT100, VT100+, and **VT-UTF8**.

Bits Per Second

This feature sets the transmission speed for a serial port used in Console Redirection. Make sure that the same speed is used in both host computer and the client computer. A lower transmission speed may be required for long and busy lines. The options are 9600, 19200, 57600, and **115200** (bits per second).

Flow Control

Use this feature to set the flow control for Console Redirection to prevent data loss caused by buffer overflow. Send a "Stop" signal to stop data-sending when the receiving buffer is full. Send a "Start" signal to start data-sending when the receiving buffer is empty. The options are **None,** Hardware RTS/CTS, and Software Xon/Xoff.

The setting for each these features is displayed:

Data Bits, Parity, Stop Bits

▶ACPI Settings

Use this feature to configure Advanced Configuration and Power Interface (ACPI) power management settings for your system.

NUMA Support (Available when the OS supports this feature)

Select Enabled to enable Non-Uniform Memory Access support to enhance system performance. The options are **Enabled** and Disabled.

WHEA Support

Select Enabled to support the Windows Hardware Error Architecture (WHEA) platform and provide a common infrastructure for the system to handle hardware errors within the Windows OS environment to reduce system crashes and to enhance system recovery and health monitoring. The options are **Enabled** and Disabled.

High Precision Timer

Select Enabled to activate the High Precision Event Timer (HPET) that produces periodic interrupts at a much higher frequency than a Real-time Clock (RTC) does in synchronizing multimedia streams, providing smooth playback and reducing the dependency on other timestamp calculation devices, such as an x86 RDTSC Instruction embedded in the CPU. The High Performance Event Timer is used to replace the 8254 Programmable Interval Timer. The options are **Enabled** and Disabled.

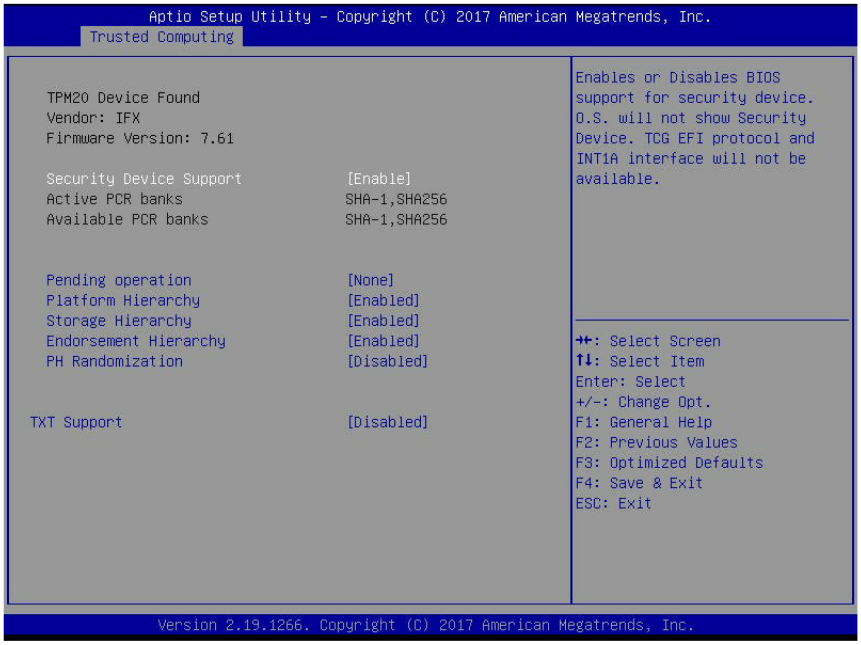
▶Trusted Computing (Available when a TPM device is installed and detected by the BIOS)

When a TPM (Trusted-Platform Module) device is detected in your machine, the following information will be displayed.

- TPM2.0 Device Found
- Vendor
- Firmware Version

Security Device Support

If this feature and the TPM jumper (JPT1) on the motherboard are both enabled, the onboard security (TPM) device will be enabled in the BIOS to enhance data integrity and system security. Please note that the OS will not show the security device. Neither TCG EFI protocol nor INT1A interaction will be made available for use. If you have made changes on the setting on this item, be sure to reboot the system for the change to take effect. The options are Disable and **Enable**. If this option is set to Enable, the following screen and items will display:



- Active PCR Banks
- Available PCR Banks

Pending Operation

Use this feature to schedule a TPM-related operation to be performed by a security (TPM) device at the next system boot to enhance system data integrity. Your system will reboot to carry out a pending TPM operation. The options are **None** and TPM Clear.

Note: Your system will reboot to carry out a pending TPM operation.

Platform Hierarchy (for TPM Version 2.0 and above)

Select Enabled for TPM Platform Hierarchy support which will allow the manufacturer to utilize the cryptographic algorithm to define a constant key or a fixed set of keys to be used for initial system boot. This early boot code is shipped with the platform and is included in the list of "public keys". During system boot, the platform firmware uses this trusted public key to verify a digital signature in an attempt to manage and control the security of the platform firmware used in a host system via a TPM device. The options are **Enabled** and Disabled.

Storage Hierarchy

Select Enabled for TPM Storage Hierarchy support that is intended to be used for non-privacy-sensitive operations by the platform owner such as an IT professional or the end user. Storage Hierarchy has an owner policy and an authorization value, both of which can be set and are held constant (-rarely changed) through reboots. This hierarchy can be cleared or changed independently of the other hierarchies. The options are **Enabled** and Disabled.

Endorsement Hierarchy

Select Enabled for Endorsement Hierarchy support, which contains separate controls to address the user's privacy concerns because the primary keys in this hierarchy are certified by the TPM or a manufacturer to be constrained to an authentic TPM device that is attached to an authentic platform. A primary key can be an encrypted, and a certificate can be created using TPM2_ ActivateCredential. It allows the user to independently enable "flag, policy, and authorization value" without involving other hierarchies. A user with privacy concerns can disable the endorsement hierarchy while still using the storage hierarchy for TPM applications and permitting the platform software to use the TPM. The options are **Enabled** and Disabled.

PH (Platform Hierarchy) Randomization (for TPM Version 2.0 and above)

Select Enabled for Platform Hierarchy Randomization support, which is used only during the platform developmental stage. This feature cannot be enabled in the production platforms. The options are **Disabled** and Enabled.

TXT Support

Select Enabled to enable Intel Trusted Execution Technology (TXT) support to enhance system security and data integrity. The options are **Disabled** and Enabled.

> **Note 1**: If the option for this item (TXT Support) is set to Enabled, be sure to disable EV DFX (Device Function On-Hide) support for the system to work properly. (EV DFX is under "IIO Configuration" in the "Chipset/North Bridge" submenu).
>
> **Note 2:** For more information on TPM, please refer to the TPM manual at http://www.supermicro.com/manuals/other.

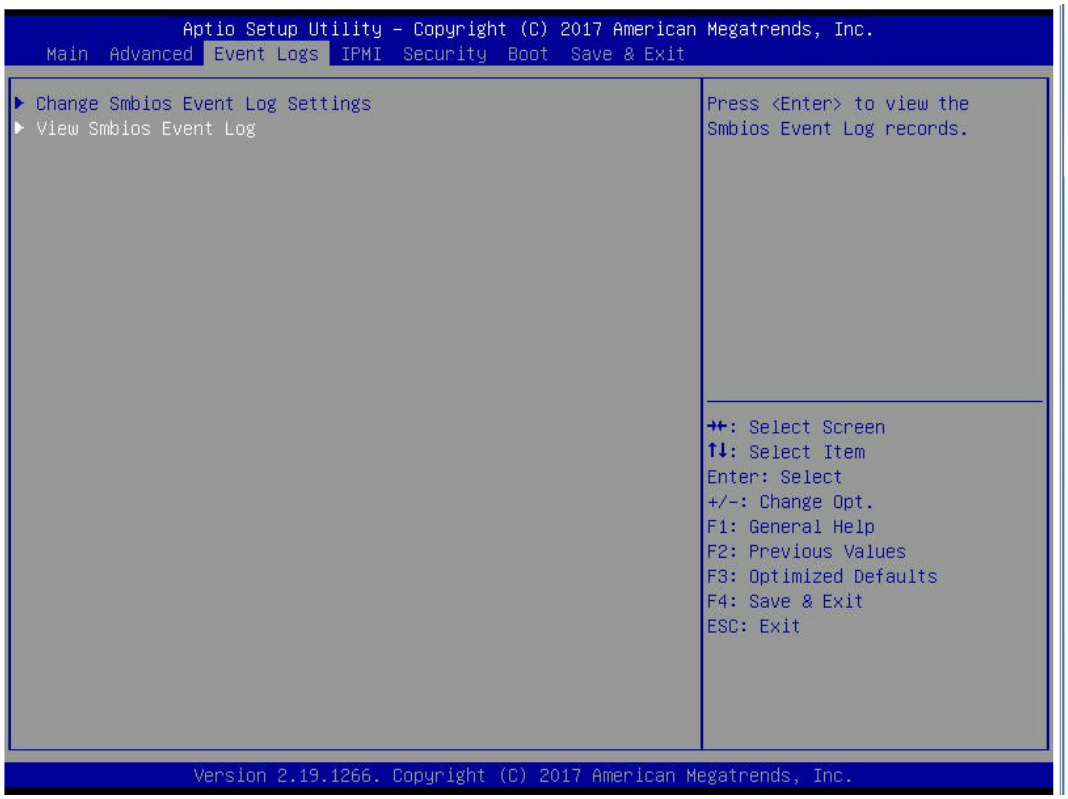
▶Intel Virtual RAID on CPU

When this submenu is selected and the RAID devices are detected, the BIOS screen displays the following items:

Intel VROC with VMD Technology 5.0.0.1205

6.4 Event Logs

Use this tab page to configure Event Log settings.



▶Change SMBIOS Event Log Settings

Enabling/Disabling Options

SMBIOS Event Log

Select Enabled to enable SMBIOS (System Management BIOS) Event Logging during system boot. The options are **Enabled** and Disabled.

Erasing Settings

Erase Event Log

Select Enabled to erase all error events in the SMBIOS (System Management BIOS) log before an event logging is initialized at bootup. The options are **No**, Yes, Next Reset, and Yes, Next Reset.

When Log is Full

Select Erase Immediately to immediately erase all errors in the SMBIOS event log when the event log is full. Select Do Nothing for the system to do nothing when the SMBIOS event log is full. The options are **Do Nothing** and Erase Immediately.

SMBIOS Event Log Standard Settings

Log System Boot Event

Select Enabled to log system boot events. The options are Enabled and **Disabled**.

MECI (Multiple Event Count Increment)

Enter the increment value for the multiple event counter. Enter a number between 1 to 255. The default setting is **1**.

METW (Multiple Event Count Time Window)

This item is used to determine how long (in minutes) should the multiple event counter wait before generating a new event log. Enter a number between 0 to 99. The default setting is **60**.

Note: Please reboot the system for the changes to take effect.

Customer Options

Log OEM Codes

Select Enabled to log the EFI Status codes as OEM codes if these codes have not been converted to Legacy. The options are **Enabled** and Disabled.

Convert OEM Codes

Select Enabled to convert the EFI Status codes to standard SMBIOS codes. Please note that this option is not available for all EFI Status codes. The options are Enabled and **Disabled**.

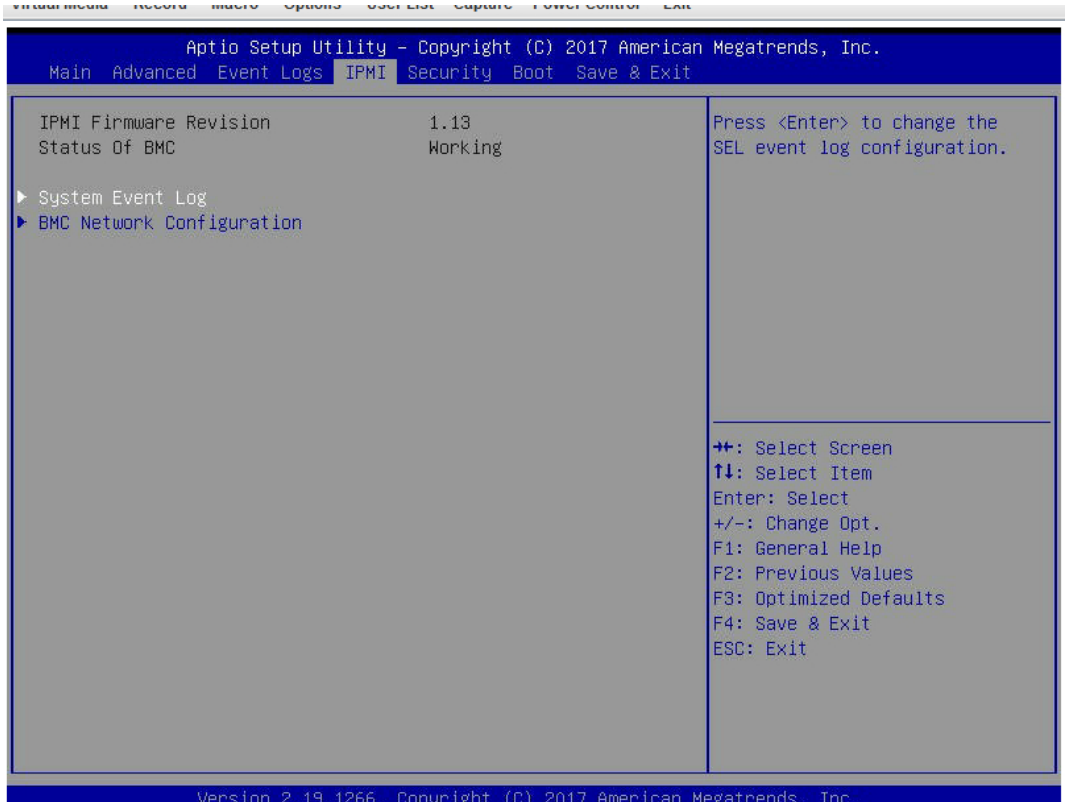
Note: Please reboot the system for the changes to take effect.

▶View System Event Log

This item allows the user to view the event in the system event log. Select this item and press <Enter> to view the status of an event in the log. The following categories are displayed:
Date/Time/Error Code/Severity

6.5 IPMI

Use this tab page to configure Intelligent Platform Management Interface (IPMI) settings.



The following items will be displayed:

- IPMI Firmware Revision
- Status of BMC

▶System Event Log

Enabling/Disabling Options

SEL Components

Select Enabled for all system event logging at bootup. The options are **Enabled** and Disabled.

Erasing Settings

Erase SEL

Select Yes, On next reset to erase all system event logs upon next system reboot. Select Yes, On every reset to erase all system event logs upon each system reboot. Select No to keep all system event logs after each system reboot. The options are **No,** Yes, On next reset, and Yes, On every reset.

When SEL is Full

This feature allows the user to determine what the BIOS should do when the system event log is full. Select Erase Immediately to erase all events in the log when the system event log is full. The options are **Do Nothing** and Erase Immediately.

Custom EFI Logging Options

Log EFI Status Codes

Select EFI (Extensible Firmware Interface) Status Codes to log EFI status codes. Select Error Codes to log EFI error codes. Select Progress Code to log the EFI progress code. Select both to log both EFI error codes and progress codes. The options are Disabled, Both, **Error code** and Progress code.

> **Note**: After making changes on a setting, be sure to reboot the system for the changes to take effect.

▶BMC Network Configuration

The following items will be displayed:

- IPMI LAN Selection: This item displays the IPMI LAN setting. The default setting is **Failover**.
- IPMI Network Link Status: This item displays the IPMI Network Link status. The default setting is **Shared LAN**.
- Current Configuration Address Source: This item displays the source of the current IPMI LAN address. The default setting is **CHCP (Dynamic Host Configuration Protocol)**.
- Station IP Address: This item displays the Station IP address for this computer. This should be in decimal and in dotted quad form (i.e., 192.168.10.253).
- Subnet Mask: This item displays the sub-network that this computer belongs to. The value of each three-digit number separated by dots should not exceed 255.
- Station MAC Address: This item displays the Station MAC address for this computer. Mac addresses are 6 two-digit hexadecimal numbers.
- Gateway IP Address: This item displays the Gateway IP address for this computer. This should be in decimal and in dotted quad form (i.e., 192.168.10.253).
- VLAN: This item displays the status of VLAN support.

Update IPMI LAN Configuration

Select Yes for the BIOS to implement all IP/MAC address changes at the next system boot. The options are **No** and Yes. If this option is set to Yes, the following items will display:

IPMI LAN Selection

Use this feature to select the type of the IPMI LAN. The options are Dedicated, Shared, and **Failover**.

VLAN

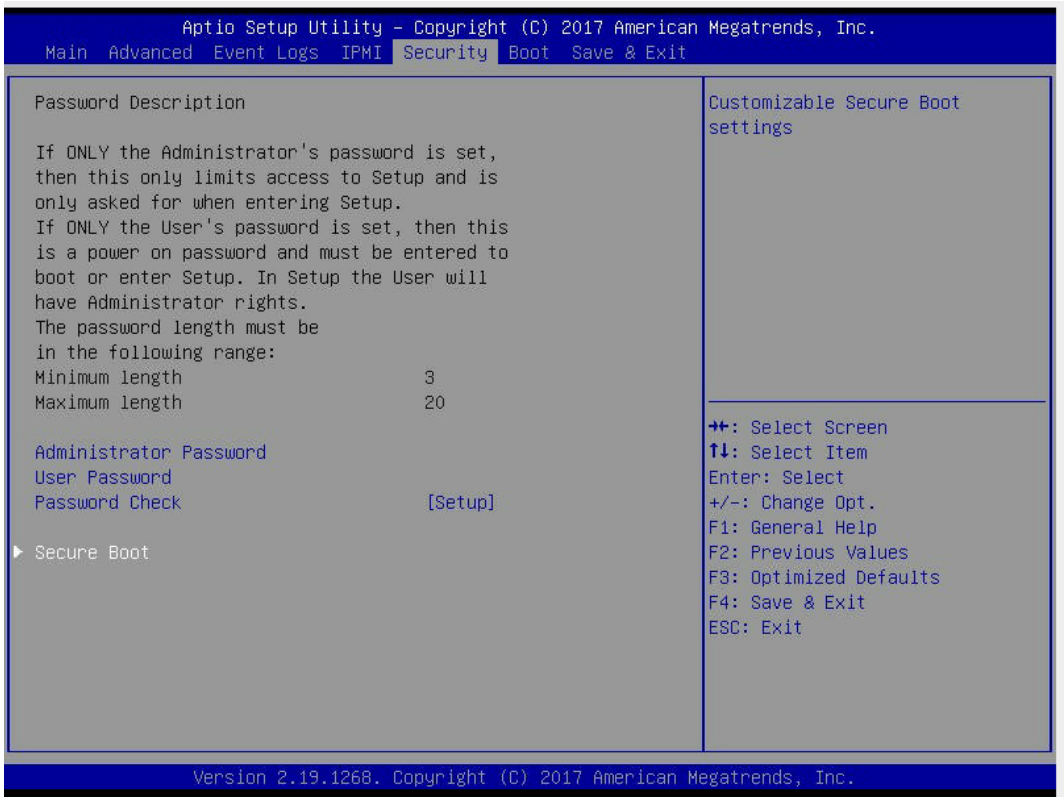
Select Enabled to enable IPMI VLAN function support. The options are **Enabled** and Disabled.

Configuration Address Source

Use this item to select the IP address source for this computer. If Static is selected, you will need to know the IP address of this computer and enter it to the system manually in the field. If DHCP is selected, AMI BIOS will search for a DHCP (Dynamic Host Configuration Protocol) server attached to the network and request the next available IP address for this computer. The options are **DHCP** and Static.

6.6 Security

Use this tab page to configure Security settings.



Administrator Password

Use this feature to set the administrator password which is required to enter the BIOS setup utility. The length of the password should be from 3 characters to 20 characters long.

User Password

Use this feature to set the user password which is required to enter the BIOS setup utility. The length of the password should be from 3 characters to 20 characters long.

Password Check

Select Setup for the system to check for a password at Setup. Select Always for the system to check for a password at bootup or upon entering the BIOS Setup utility. The options are **Setup** and Always.

▸Secure Boot

When you select this submenu and press the <Enter> key, the following items will display:

- System Mode
- Secure Boot
- Vendor Keys

Attempt Secure Boot

If this item is set to Enabled, Secure Boot will be activated when a Platform Key (PK) is entered. A Platform Key is a security key used to manage the security settings of the platform firmware used in your system. The options are Enabled and **Disabled.**

Secure Boot Mode

Use this feature to select the desired secure boot mode for the system. The options are Standard and **Custom**.

▸Key Management

Provision Factory Default Keys

Select Enabled to install all manufacturer default keys for the following system security settings. The options are Enabled and **Disabled**.

▸Install Factor Default Keys

Select Yes to install all manufacturer defaults for the following system security settings. The options are **Yes** and No.

▸Enroll EFI Image

Select this item and press <Enter> to select an EFI (Extensible Firmware Interface) image for the system to operate in Secure Boot mode.

▸Save All Secure Boot Variables

This feature allows the user to set and save the secure boot key variables specified by the user.

Secure Boot Variables

Secure Boot Variable/Size/Key#/Key Sources

▸Platform Key (PK)

This feature allows the user to enter and configure a set of values to be used as a platform firmware key for the system. This set of values also indicate the size, the keys numbers, and the key source of the Platform Key. The options are **Save to File**, Set New, and Erase.

▸Key Exchange Keys

This feature allows the user to enter and configure a set of values to be used as a Key-Exchange-Keys for the system. This set of values also indicate the size, the keys numbers, and the key source of the Key-Exchange-Keys. The options are **Save to File**, Set New, and Erase.

▸Authorized Signatures

This feature allows the user to enter and configure a set of values to be used as Authorized Signatures for the system. This set of values also indicate the size, the keys numbers, and the key source of the Authorized Signatures. The options are **Set New** and Append.

Secure Boot Variable/Size/Key#/Key Sources The options are **Save to File**, Set New, and Erase.

▸Forbidden Signatures

This feature allows the user to enter and configure a set of values to be used as Forbidden Signatures for the system. This set of values also indicate the size, the keys numbers, and the key source of the Forbidden Signatures. The options are **Save to File**, Set New, and Erase.

▸Authorized TimeStamps

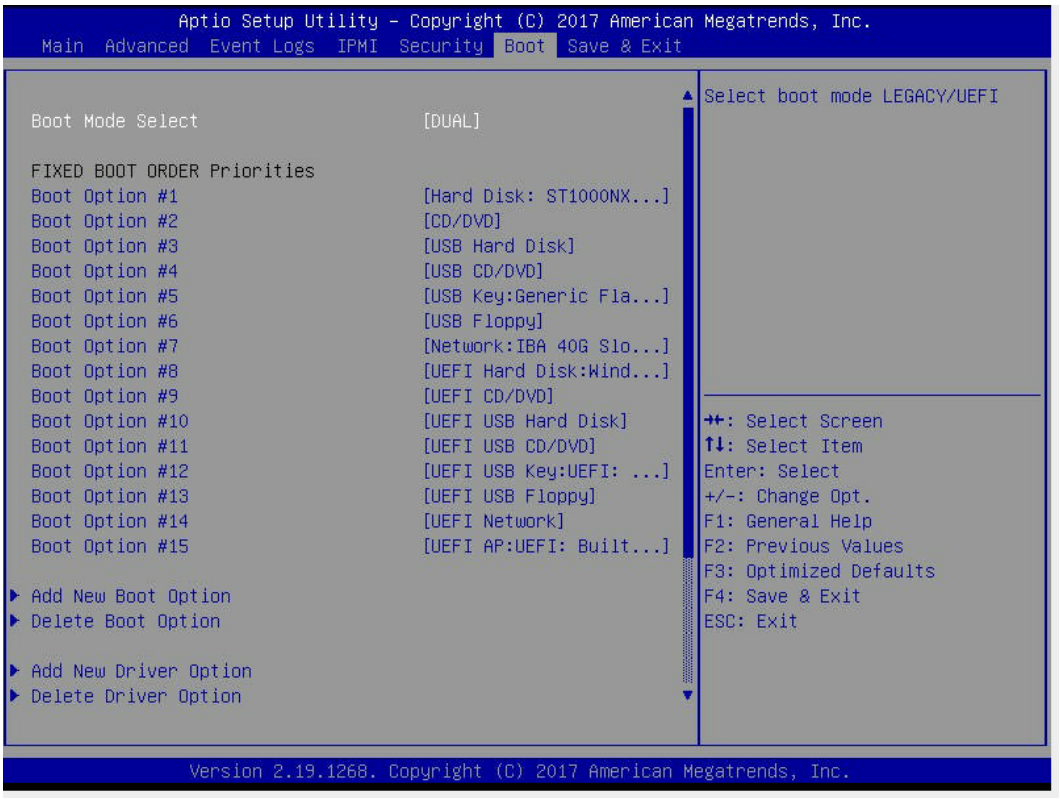
This feature allows the user to set and save the timestamps for Authorized Signatures to indicate when these signatures were entered into the system. The options are **Save to File**, Set New, and Erase.

▸OsRecovery Signatures

This feature allows the user to set and save the Authorized Signatures used for OS recovery. The options are **Save to File**, Set New, and Erase.

6.7 Boot

Use this tab page to configure Boot Settings.



Boot Mode Select

Use this feature to select the type of devices that the system is going to boot from. The options are Legacy, UEFI (Unified Extensible Firmware Interface), and **Dual.**

Fixed Boot Order Priorities

This feature prioritizes the order of a bootable device from which the system will boot. Press <Enter> on each entry from top to bottom to select devices.

When the item above -"Boot Mode Select" is set to **Dual** (default), the following items will be displayed for configuration:

- Boot Option #1 - Boot Option #15

When the item above -"Boot Mode Select" is set to Legacy, the following items will be display for configuration:

- Boot Option #1 - Boot Option #7

When the item above -"Boot Mode Select" is set to UEFI, the following items will be display for configuration:

- Boot Option #1 - Boot Option #8

Add New Boot Option

This feature allows the user to add a new boot option to the boot priority features for your system.

Add Boot Option

Use this item to specify the name for the new boot option.

Path for Boot Option

Use this feature to enter the path for the new boot option in the format fsx:\path\filename.efi.

Boot Option File Path

Use this feature to specify the file path for the new boot option.

Create

After the name and the file path for the boot option are set, press <Enter> to create the new boot option in the boot priority list.

▶Delete Boot Option

Use this feature to select a boot device to delete from the boot priority list.

Delete Boot Option

Use this feature to remove an EFI boot option from the boot priority list.

▶Add New Driver Option

Use this feature to select a new driver to add to the boot priority list.

Add Driver Option

Use this feature to specify the name of the driver that the new boot option is added to.

Path for Drover Option

Use this feature to specify the path to the driver that the new boot option is added to.

Driver Option File Path

Use this feature to specify the file path of the driver that the new boot option is added to.

Create

After the driver option name and the file path are set, press <Enter> to enter to submenu and click OK to create the new boot option drive.

▶Delete Driver Option

Use this item to select a boot driver to delete from the boot priority list.

Delete Drive Option

Select the target boot driver to delete from the boot priority list.

▶Hard Disk Drive BBS Priorities

- Boot Option #1 - #5

▶Network Drive BBS Priorities

- Boot Option #1

▶USB Key Drive BBS Priorities

- Boot Option #1

▶UEFI Hard Disk Drive BBS Priorities

- Boot Option #1

▶UEFI USB Key Drive BBS Priorities

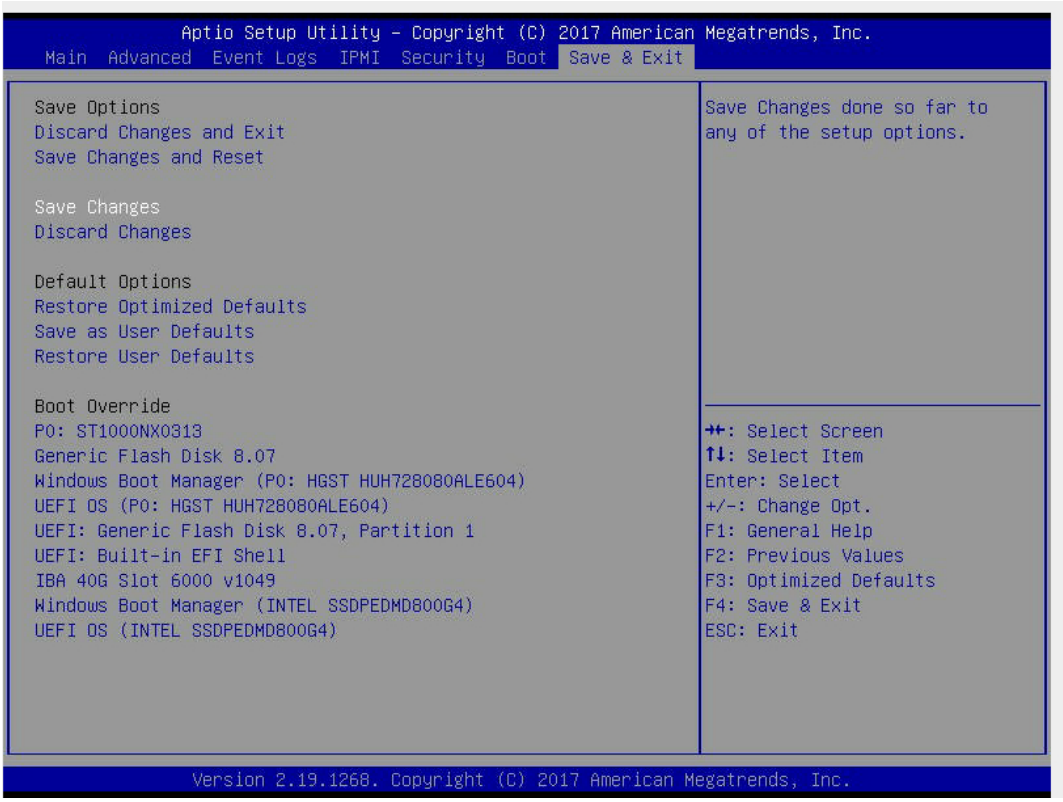
- Boot Option #1

▶UEFI Application Boot Priorities

- Boot Option #1

6.8 Save & Exit

Use this tab page to configure Save & Exit settings.



Save Options

Discard Changes and Exit

Select this option to quit the BIOS setup without making any permanent changes to the system configuration and reboot the computer. Select Discard Changes and Exit from the Exit menu and press <Enter>.

Save Changes and Reset

When you have completed the system configuration changes, select this option to leave the BIOS setup utility and reboot the computer for the new system configuration parameters to take effect. Select Save Changes and Exit from the Exit menu and press <Enter>.

Save Changes

When you have completed the system configuration changes, select this option to save all changes made. This will not reset (reboot) the system.

Discard Changes

Select this option and press <Enter> to discard all the changes and return to the AMI BIOS setup utility.

Default Options

Restore Optimized Defaults

To set this feature, select Restore Defaults from the Exit menu and press <Enter> to load manufacturer default settings which are intended for maximum system performance but not for maximum stability.

Save As User Defaults

To set this feature, select Save as User Defaults from the Exit menu and press <Enter>. This enables the user to save any changes to the BIOS setup for future use.

Restore User Defaults

To set this feature, select Restore User Defaults from the Exit menu and press <Enter>. Use this feature to retrieve user-defined settings that were saved previously.

Boot Override

This feature allows the user to override the Boot priorities sequence in the Boot menu, and immediately boot the system with a device specified by the user instead of the one specified in the boot list. This is a one-time override.

Appendix A

BIOS Error Codes

A-1 BIOS Error Beep (POST) Codes

During the POST (Power-On Self-Test) routines, which are performed each time the system is powered on, errors may occur.

Non-fatal errors are those which, in most cases, allow the system to continue the boot-up process. The error messages normally appear on the screen.

Fatal errors are those which will not allow the system to continue the boot-up procedure. If a fatal error occurs, you should consult with your system manufacturer for possible repairs.

These fatal errors are usually communicated through a series of audible beeps. The numbers on the fatal error list (on the following page) correspond to the number of beeps for the corresponding error. All errors listed, with the exception of Beep Code 8, are fatal errors.

BIOS Error Beep (POST) Codes		
Beep Code	**Error Message**	**Description**
1 short	Refresh	Circuits have been reset (Ready to power up)
5 short, 1 long	Memory error	No memory detected in system
5 long, 2 short	Display memory read/write error	Video adapter missing or with faulty memory
1 long continuous	System OH	System overheat condition

A-2 Additional BIOS POST Codes

The AMI BIOS supplies additional checkpoint codes, which are documented online at http://www.supermicro.com/support/manuals/ ("AMI BIOS POST Codes User's Guide").

When BIOS performs the Power On Self Test, it writes checkpoint codes to I/O port 0080h. If the computer cannot complete the boot process, a diagnostic card can be attached to the computer to read I/O port 0080h (Supermicro p/n AOC-LPC80-20).

For information on AMI updates, please refer to http://www.ami.com/products/.

Appendix B

Standardized Warning Statements for AC Systems

About Standardized Warning Statements

The following statements are industry standard warnings, provided to warn the user of situations which have the potential for bodily injury. Should you have questions or experience difficulty, contact Supermicro's Technical Support department for assistance. Only certified technicians should attempt to install or configure components.

Read this appendix in its entirety before installing or configuring components in the Supermicro chassis.

These warnings may also be found on our website at http://www.supermicro.com/about/policies/safety_information.cfm.

Warning Definition



Warning! This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents.

警告の定義

この警告サインは危険を意味します。

人身事故につながる可能性がありますので、いずれの機器でも動作させる前に、

電気回路に含まれる危険性に注意して、標準的な事故防止策に精通して下さい。

此警告符号代表危险。

您正处于可能受到严重伤害的工作环境中。在您使用设备开始工作之前，必须充分意识到触电的危险，并熟练掌握防止事故发生的标准工作程序。请根据每项警告结尾的声明号码找到此设备的安全性警告说明的翻译文本。

此警告符號代表危險。

您正處於可能身體可能會受損傷的工作環境中。在您使用任何設備之前，請注意觸電的危險，並且要熟悉預防事故發生的標準工作程序。請依照每一注意事項後的號碼找到相關的翻譯說明內容。

Warnung

WICHTIGE SICHERHEITSHINWEISE

Dieses Warnsymbol bedeutet Gefahr. Sie befinden sich in einer Situation, die zu Verletzungen führen kann. Machen Sie sich vor der Arbeit mit Geräten mit den Gefahren elektrischer Schaltungen und den üblichen Verfahren zur Vorbeugung vor Unfällen vertraut. Suchen Sie mit der am Ende jeder Warnung angegebenen Anweisungsnummer nach der jeweiligen Übersetzung in den übersetzten Sicherheitshinweisen, die zusammen mit diesem Gerät ausgeliefert wurden.

BEWAHREN SIE DIESE HINWEISE GUT AUF.

INSTRUCCIONES IMPORTANTES DE SEGURIDAD

Este símbolo de aviso indica peligro. Existe riesgo para su integridad física. Antes de manipular cualquier equipo, considere los riesgos de la corriente eléctrica y familiarícese con los procedimientos estándar de prevención de accidentes. Al final de cada advertencia encontrará el número que le ayudará a encontrar el texto traducido en el apartado de traducciones que acompaña a este dispositivo.

GUARDE ESTAS INSTRUCCIONES.

IMPORTANTES INFORMATIONS DE SÉCURITÉ

Ce symbole d'avertissement indique un danger. Vous vous trouvez dans une situation pouvant entraîner des blessures ou des dommages corporels. Avant de travailler sur un équipement, soyez conscient des dangers liés aux circuits électriques et familiarisez-vous avec les procédures couramment utilisées pour éviter les accidents. Pour prendre connaissance des traductions des avertissements figurant dans les consignes de sécurité traduites qui accompagnent cet appareil, référez-vous au numéro de l'instruction situé à la fin de chaque avertissement.

CONSERVEZ CES INFORMATIONS.

תקנון הצהרות אזהרה

הצהרות הבאות הן אזהרות על פי תקני התעשייה, על מנת להזהיר את המשתמש מפני חבלה פיזית אפשרית. במידה ויש שאלות או היתקלות בבעיה כלשהי, יש ליצור קשר עם מחלקת תמיכה טכנית של סופרמיקרו. טכנאים מוסמכים בלבד רשאים להתקין או להגדיר את הרכיבים.

יש לקרוא את הנספח במלואו לפני התקנת או הגדרת הרכיבים במארזי סופרמיקרו.

ا كً ف حالة وٌكي أى تتسبب ف اصابة جسد ةٌ هذا الزهز عٌ خطز !تحذ زٌ .
قبل أى تعول على أي هعذات،كي على علن بالوخاطز ال ٱجوة عي الذوائز
الكهزبائ ةٍ
وكي على درا ةٌ بالووارسات البقائ ةٍ لو عٌ وقع أي حادث
استخذم رقن الب إٍى الو صٌص ف هًا ةٌ كل تحذ زٌ للعشر تزجوتها

안전을 위한 주의사항

경고!

이 경고 기호는 위험이 있음을 알려 줍니다. 작업자의 신체에 부상을 야기 할 수 있는 상태에 있게 됩니다. 모든 장비에 대한 작업을 수행하기 전에 전기회로와 관련된 위험요소들을 확인하시고 사전에 사고를 방지할 수 있도록 표준 작업절차를 준수해 주시기 바랍니다.

해당 번역문을 찾기 위해 각 경고의 마지막 부분에 제공된 경고문 번호를 참조하십시오

BELANGRIJKE VEILIGHEIDSINSTRUCTIES

Dit waarschuwings symbool betekent gevaar. U verkeert in een situatie die lichamelijk letsel kan veroorzaken. Voordat u aan enige apparatuur gaat werken, dient u zich bewust te zijn van de bij een elektrische installatie betrokken risico's en dient u op de hoogte te zijn van de standaard procedures om ongelukken te voorkomen. Gebruik de nummers aan het eind van elke waarschuwing om deze te herleiden naar de desbetreffende locatie.

BEWAAR DEZE INSTRUCTIES

Installation Instructions



Warning! Read the installation instructions before connecting the system to the power source.

設置手順書

システムを電源に接続する前に、設置手順書をお読み下さい。

警告

将此系统连接电源前,请先阅读安装说明。

警告

將系統與電源連接前，請先閱讀安裝說明。

Warnung

Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

¡Advertencia!

Lea las instrucciones de instalación antes de conectar el sistema a la red de alimentación.

Attention

Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

יש לקרוא את הוראות התקנה לפני חיבור המערכת למקור מתח.

اقر إرشادات التركيب قبل توصيل النظام إلى مصدر للطاقة

시스템을 전원에 연결하기 전에 설치 안내를 읽어주십시오.

Waarschuwing

Raadpleeg de installatie-instructies voordat u het systeem op de voedingsbron aansluit.

Circuit Breaker



Warning! This product relies on the building's installation for short-circuit (overcurrent) protection. Ensure that the protective device is rated not greater than: 250 V, 20 A.

サーキット・ブレーカー

この製品は、短絡（過電流）保護装置がある建物での設置を前提としています。

保護装置の定格が250 V、20 Aを超えないことを確認下さい。

警告

此产品的短路(过载电流)保护由建筑物的供电系统提供,确保短路保护设备的额定电流不大于250V,20A。

警告

此產品的短路(過載電流)保護由建築物的供電系統提供,確保短路保護設備的額定電流不大於250V,20A。

Warnung

Dieses Produkt ist darauf angewiesen, dass im Gebäude ein Kurzschluss- bzw. Überstromschutz installiert ist. Stellen Sie sicher, dass der Nennwert der Schutzvorrichtung nicht mehr als: 250 V, 20 A beträgt.

¡Advertencia!

Este equipo utiliza el sistema de protección contra cortocircuitos (o sobrecorrientes) del edificio. Asegúrese de que el dispositivo de protección no sea superior a: 250 V, 20 A.

Attention

Pour ce qui est de la protection contre les courts-circuits (surtension), ce produit dépend de l'installation électrique du local. Vérifiez que le courant nominal du dispositif de protection n'est pas supérieur à :250 V, 20 A.

מוצר זה מסתמך על הגנה המותקנת במבנים למניעת קצר חשמלי. יש לוודא כי
המכשיר המגן מפני הקצר החשמלי הוא לא יותר מ-250VDC, 20A

هذا المنتج يعتمد على معداث الحمايت مه الدوائرالقصيرة التي تم تثبيتها في
المبنى
تأكد من أن تقييم الجهاز الوقائي ليس أكثر من : 20A, 250V

경고!

이 제품은 전원의 단락(과전류)방지에 대해서 전적으로 건물의 관련 설비에 의존합니다.
보호장치의 정격이 반드시 250V(볼트), 20A(암페어)를 초과하지 않도록 해야 합니다.

Waarschuwing

Dit product is afhankelijk van de kortsluitbeveiliging (overspanning) van uw electrische installatie. Controleer of het beveiligde aparaat niet groter gedimensioneerd is dan 250V, 20A.

Power Disconnection Warning



Warning! The system must be disconnected from all sources of power and the power cord removed from the power supply module(s) before accessing the chassis interior to install or remove system components.

電源切断の警告

システムコンポーネントの取り付けまたは取り外しのために、シャーシー内部にアクセスするには、システムの電源はすべてのソースから切断され、電源コードは電源モジュールから取り外す必要があります。

警告

在你打开机箱并安装或移除内部器件前,必须将系统完全断电,并移除电源线。

警告

在您打開機殼安裝或移除內部元件前，必須將系統完全斷電，並移除電源線。

Warnung

Das System muss von allen Quellen der Energie und vom Netzanschlusskabel getrennt sein, das von den Spg.Versorgungsteilmodulen entfernt wird, bevor es auf den Chassisinnenraum zurückgreift, um Systemsbestandteile anzubringen oder zu entfernen.

¡Advertencia!

El sistema debe ser disconnected de todas las fuentes de energía y del cable eléctrico quitado de los módulos de fuente de alimentación antes de tener acceso el interior del chasis para instalar o para quitar componentes de sistema.

Attention

Le système doit être débranché de toutes les sources de puissance ainsi que de son cordon d'alimentation secteur avant d'accéder à l'intérieur du chassis pour installer ou enlever des composants de systéme.

אזהרה מפני ניתוק חשמלי

!אזהרה

יש לנתק את המערכת מכל מקורות החשמל ויש להסיר את כבל החשמלי מהספק

.לפני גישה לחלק הפנימי של המארז לצורך התקנת או הסרת רכיבים

يجب فصم انتظاو من جميع مصادر انطاقت وإزانت سهك انكهرباء من وحدة امداد
انطاقت قبم
انصل إنى اثماطق انداخهيت نههيكم نتثبيج أو إزانت مكناث الجهاز

경고!

시스템에 부품들을 장착하거나 제거하기 위해서는 섀시 내부에 접근하기 전에 반드시 전원 공급장치로부터 연결되어있는 모든 전원과 전기코드를 분리해주어야 합니다.

Waarschuwing

Voordat u toegang neemt tot het binnenwerk van de behuizing voor het installeren of verwijderen van systeem onderdelen, dient u alle spanningsbronnen en alle stroomkabels aangesloten op de voeding(en) van de behuizing te verwijderen

Equipment Installation



Warning! Only trained and qualified personnel should be allowed to install, replace, or service this equipment.

機器の設置

トレーニングを受け認定された人だけがこの装置の設置、交換、またはサービスを許可されています。

警告

只有经过培训且具有资格的人员才能进行此设备的安装、更换和维修。

警告

只有經過受訓且具資格人員才可安裝、更換與維修此設備。

Warnung

Das Installieren, Ersetzen oder Bedienen dieser Ausrüstung sollte nur geschultem, qualifiziertem Personal gestattet werden.

¡Advertencia!

Solamente el personal calificado debe instalar, reemplazar o utilizar este equipo.

Attention

Il est vivement recommandé de confier l'installation, le remplacement et la maintenance de ces équipements à des personnels qualifiés et expérimentés.

אזהרה!

צוות מוסמך בלבד רשאי להתקין, להחליף את הציוד או לתת שירות עבור הציוד.

والمدربيه لتزكيب واستبدال أو خدمة هذا الجهاس يجب أن يسمح فقط للمظفيه المؤهليه

경고!

훈련을 받고 공인된 기술자만이 이 장비의 설치, 교체 또는 서비스를 수행할 수 있습니다.

Waarschuwing

Deze apparatuur mag alleen worden geïnstalleerd, vervangen of hersteld door geschoold en gekwalificeerd personeel.

Restricted Area



Warning! This unit is intended for installation in restricted access areas. A restricted access area can be accessed only through the use of a special tool, lock and key, or other means of security. (This warning does not apply to workstations).

アクセス制限区域

このユニットは、アクセス制限区域に設置されることを想定しています。

アクセス制限区域は、特別なツール、鍵と錠前、その他のセキュリティの手段を用いてのみ出入りが可能です。

警告

此部件应安装在限制进出的场所，限制进出的场所指只能通过使用特殊工具、锁和钥匙或其它安全手段进出的场所。

警告

此裝置僅限安裝於進出管制區域，進出管制區域係指僅能以特殊工具、鎖頭及鑰匙或其他安全方式才能進入的區域。

Warnung

Diese Einheit ist zur Installation in Bereichen mit beschränktem Zutritt vorgesehen. Der Zutritt zu derartigen Bereichen ist nur mit einem Spezialwerkzeug, Schloss und Schlüssel oder einer sonstigen Sicherheitsvorkehrung möglich.

¡Advertencia!

Esta unidad ha sido diseñada para instalación en áreas de acceso restringido. Sólo puede obtenerse acceso a una de estas áreas mediante la utilización de una herramienta especial, cerradura con llave u otro medio de seguridad.

Attention

Cet appareil doit être installée dans des zones d'accès réservés. L'accès à une zone d'accès réservé n'est possible qu'en utilisant un outil spécial, un mécanisme de verrouillage et une clé, ou tout autre moyen de sécurité.

אזור עם גישה מוגבלת

אזהרה!

יש להתקין את היחידה באזורים שיש בהם הגבלת גישה. הגישה ניתנת בעזרת
'כלי אבטחה בלבד)מפתח, מנעול וכד.)

تخصيص هذه انحذة نترك بُها ف مناطق محظورة تم .
،مَكن انصبل إن منطقت محظورة فقط من خلال استخذاو أداة خاصت
أو أ وس هُت أخري نلالأمما قفم ومفتاح

경고!

이 장치는 접근이 제한된 구역에 설치하도록 되어있습니다. 특수도구, 잠금 장치 및 키, 또는 기타 보안 수단을 통해서만 접근 제한 구역에 들어갈 수 있습니다.

Waarschuwing

Dit apparaat is bedoeld voor installatie in gebieden met een beperkte toegang. Toegang tot dergelijke gebieden kunnen alleen verkregen worden door gebruik te maken van speciaal gereedschap, slot en sleutel of andere veiligheidsmaatregelen.

Battery Handling



Warning! There is the danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions

電池の取り扱い

電池交換が正しく行われなかった場合、破裂の危険性があります。交換する電池はメーカーが推奨する型、または同等のものを使用下さい。使用済電池は製造元の指示に従って処分して下さい。

警告

电池更换不当会有爆炸危险。请只使用同类电池或制造商推荐的功能相当的电池更换原有电池。请按制造商的说明处理废旧电池。

警告

電池更換不當會有爆炸危險。請使用製造商建議之相同或功能相當的電池更換原有電池。請按照製造商的說明指示處理廢棄舊電池。

Warnung

Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Attention

Danger d'explosion si la pile n'est pas remplacée correctement. Ne la remplacer que par une pile de type semblable ou équivalent, recommandée par le fabricant. Jeter les piles usagées conformément aux instructions du fabricant.

¡Advertencia!

Existe peligro de explosión si la batería se reemplaza de manera incorrecta. Reemplazar la batería exclusivamente con el mismo tipo o el equivalente recomendado por el fabricante. Desechar las baterías gastadas según las instrucciones del fabricante.

!אזהרה

קיימת סכנת פיצוץ של הסוללה במידה והוחלפה בדרך לא תקינה. יש להחליף
את הסוללה בסוג התואם מחברת יצרן מומלצת.
סילוק הסוללות המשומשות יש לבצע לפי הוראות היצרן.

هناك خطر من انفجار في حالة اسحبذال البطارية بطريقة غير صحيحة فعليل
اسحبذال البطارية
فقط بنفس النع أو ما يعادلها مما أوصث به الشرمة المصنعة
جخلص من البطاريات المسحعملة وفقا لحعليمات الشرمة الصانعة

경고!

배터리가 올바르게 교체되지 않으면 폭발의 위험이 있습니다. 기존 배터리와 동일하거나 제조사에서 권장하는 동등한 종류의 배터리로만 교체해야 합니다. 제조사의 안내에 따라 사용된 배터리를 처리하여 주십시오.

Waarschuwing

Er is ontploffingsgevaar indien de batterij verkeerd vervangen wordt. Vervang de batterij slechts met hetzelfde of een equivalent type die door de fabrikant aanbevolen wordt. Gebruikte batterijen dienen overeenkomstig fabrieksvoorschriften afgevoerd te worden.

Redundant Power Supplies



Warning! This unit might have more than one power supply connection. All connections must be removed to de-energize the unit.

冗長電源装置

このユニットは複数の電源装置が接続されている場合があります。

ユニットの電源を切るためには、すべての接続を取り外さなければなりません。

警告
此部件连接的电源可能不止一个，必须将所有电源断开才能停止给该部件供电。

警告
此裝置連接的電源可能不只一個，必須切斷所有電源才能停止對該裝置的供電。

Warnung

Dieses Gerät kann mehr als eine Stromzufuhr haben. Um sicherzustellen, dass der Einheit kein trom zugeführt wird, müssen alle Verbindungen entfernt werden.

¡Advertencia!

Puede que esta unidad tenga más de una conexión para fuentes de alimentación. Para cortar por completo el suministro de energía, deben desconectarse todas las conexiones.

Attention

Cette unité peut avoir plus d'une connexion d'alimentation. Pour supprimer toute tension et tout courant électrique de l'unité, toutes les connexions d'alimentation doivent être débranchées.

אם קיים יותר מספק אחד

אזהרה!

ליחדה יש יותר מחיבור אחד של ספק. יש להסיר את כל החיבורים על מנת לרוקן את היחידה.

قد يكون لهذا الجهاز عدة اتصالات بوحدات امداد الطاقة .

يجب إزالة كافة الاتصالات لعسل الوحدة عن الكهرباء

경고!

이 장치에는 한 개 이상의 전원 공급 단자가 연결되어 있을 수 있습니다. 이 장치에 전원을 차단하기 위해서는 모든 연결 단자를 제거해야만 합니다.

Waarschuwing

Deze eenheid kan meer dan één stroomtoevoeraansluiting bevatten. Alle aansluitingen dienen verwijderd te worden om het apparaat stroomloos te maken.

Backplane Voltage



Warning! Hazardous voltage or energy is present on the backplane when the system is operating. Use caution when servicing.

バックプレーンの電圧

システムの稼働中は危険な電圧または電力が、バックプレーン上にかかっています。

修理する際には注意ください。

警告

当系统正在进行时，背板上有很危险的电压或能量，进行维修时务必小心。

警告

當系統正在進行時，背板上有危險的電壓或能量，進行維修時務必小心。

Warnung

Wenn das System in Betrieb ist, treten auf der Rückwandplatine gefährliche Spannungen oder Energien auf. Vorsicht bei der Wartung.

¡Advertencia!

Cuando el sistema está en funcionamiento, el voltaje del plano trasero es peligroso. Tenga cuidado cuando lo revise.

Attention

Lorsque le système est en fonctionnement, des tensions électriques circulent sur le fond de panier. Prendre des précautions lors de la maintenance.

מתח בפנל האחורי

אזהרה!

קיימת סכנת מתח בפנל האחורי בזמן תפעול המערכת. יש להיזהר במהלך העבודה.

هناك خطر مه التيار الكهزبائي أوالطاقة المجبدة على اللحة
عندما يكن النظام يعمل كه حذرا عند خدمة هذا الجهاس

경고!
시스템이 동작 중일 때 후면판 (Backplane)에는 위험한 전압이나 에너지가 발생 합니다. 서비스 작업 시 주의하십시오.

Waarschuwing
Een gevaarlijke spanning of energie is aanwezig op de backplane wanneer het systeem in gebruik is. Voorzichtigheid is geboden tijdens het onderhoud.

Comply with Local and National Electrical Codes



Warning! Installation of the equipment must comply with local and national electrical codes.

地方および国の電気規格に準拠

機器の取り付けはその地方および国の電気規格に準拠する必要があります。

警告
设备安装必须符合本地与本国电气法规。

警告
設備安裝必須符合本地與本國電氣法規。

Warnung
Die Installation der Geräte muss den Sicherheitsstandards entsprechen.

¡Advertencia!
La instalacion del equipo debe cumplir con las normas de electricidad locales y nacionales.

Attention
L'équipement doit être installé conformément aux normes électriques nationales et locales.

תיאום חוקי החשמל הארצי
אזהרה!
התקנת הציוד חייבת להיות תואמת לחוקי החשמל המקומיים והארציים.

تركيب المعدات الكهربائية يجب أن يمتثل للقاويه المحلية والبطية المتعلقة
بالكهرباء

경고!
현 지역 및 국가의 전기 규정에 따라 장비를 설치해야 합니다.

Waarschuwing
Bij installatie van de apparatuur moet worden voldaan aan de lokale en nationale elektriciteitsvoorschriften.

Product Disposal



Warning! Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄
この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告
本产品的废弃处理应根据所有国家的法律和规章进行。

警告
本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung
Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!
Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de l'environnement. Renseignez-vous auprès de l'organisme compétent.

סילוק המוצר

אזהרה!

סילוק סופי של מוצר זה חייב להיות בהתאם להנחיות וחוקי המדינה.

التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقا لجميع القانين واللائح البطنية عند

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.

Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.

Hot Swap Fan Warning



Warning! Hazardous moving parts. Keep away from moving fan blades. The fans might still be turning when you remove the fan assembly from the chassis. Keep fingers, screwdrivers, and other objects away from the openings in the fan assembly's housing.

ファン・ホットスワップの警告

警告!回転部品に注意。運転中は回転部(羽根)に触れないでください。シャーシから冷却ファン装置を取り外した際、ファンがまだ回転している可能性があります。ファンの開口部に、指、ドライバー、およびその他のものを近づけないで下さい。

警告!

警告！危险的可移动性零件。请务必与转动的风扇叶片保持距离。 当您从机架移除风扇装置，风扇可能仍在转动。小心不要将手指、螺丝起子和其他物品太靠近风扇

警告

危險的可移動性零件。請務必與轉動的風扇葉片保持距離。 當您從機架移除風扇裝置，風扇可能仍在轉動。小心不要將手指、螺絲起子和其他物品太靠近風扇。

Warnung

Gefährlich Bewegende Teile. Von den bewegenden Lüfterblätter fern halten. Die Lüfter drehen sich u. U. noch, wenn die Lüfterbaugruppe aus dem Chassis genommen wird. Halten Sie Finger, Schraubendreher und andere Gegenstände von den Öffnungen des Lüftergehäuses entfernt.

¡Advertencia!

Riesgo de piezas móviles. Mantener alejado de las aspas del ventilador. Los ventiladores podran dar vuelta cuando usted quite ell montaje del ventilador del chasis. Mandtenga los dedos, los destornilladores y todos los objetos lejos de las aberturas del ventilador

Attention

Pieces mobiles dangereuses. Se tenir a l'ecart des lames du ventilateur Il est possible que les ventilateurs soient toujours en rotation lorsque vous retirerez le bloc ventilateur du châssis. Prenez garde à ce que doigts, tournevis et autres objets soient éloignés du logement du bloc ventilateur.

אזהרה!

חלקים נעים מסוכנים. התרחק מלהבי המאוורר בפעולהכאשר מסירים את חלקי
המאוורר מהמארז, יתכן והמאוררים עדיין עובדים. יש להרחיק למרחק בטוח את
האצבעות וכלי עבודה שונים מהפתחים בתוך המאוורר

تحذير! أجزاء متحركة خطرة. ابتعد عن شفرات المروحة المتحركة.من الممكن أن
المراوح لا تزال تدورعند إزالة كتلة المروحة من الهيكل يجب إبقاء الأصابع
.ومفكات البراغي وغيرها من الأشياء بعيدا عن الفتحات في كتلة المروحة

경고!

움직이는 위험한 부품. 회전하는 송풍 날개에 접근하지 마세요. 섀시로부터 팬 조립품을 제거할 때 팬은 여전히 회전하고 있을 수 있습니다. 팬 조림품 외관의 열려있는 부분들로부터 손가락 및 스크류드라이버, 다른 물체들이 가까이 하지 않도록 배치해 주십시오.

Waarschuwing

Gevaarlijk bewegende onderdelen. Houd voldoende afstand tot de bewegende ventilatorbladen. Het is mogelijk dat de ventilator nog draait tijdens het verwijderen van het ventilatorsamenstel uit het chassis. Houd uw vingers, schroevendraaiers en eventuele andere voorwerpen uit de buurt van de openingen in de ventilatorbehuizing.

Power Cable and AC Adapter



Warning! When installing the product, use the provided or designated connection cables, power cables and AC adaptors. Using any other cables and adaptors could cause a malfunction or a fire. Electrical Appliance and Material Safety Law prohibits the use of UL or CSA -certified cables (that have UL/CSA shown on the cord) for any other electrical devices than products designated by Supermicro only.

電源コードとACアダプター

製品を設置する場合、提供または指定および購入された接続ケーブル、電源コードとACアダプターを 該当する地域の条例や安全基準に適合するコードサイズやプラグと共に使用下さい。他のケーブルやアダプタを使用すると故障や火災の原因になることがあります。

電気用品安全法は、ULまたはCSA認定のケーブル(UL/CSEマークがコードに表記)を Supermicroが指定する製品以外に使用することを禁止しています。

警告

安装此产品时,请使用本身提供的或指定的或采购的连接线,电源线和电源适配器，包含遵照当地法规和安全要求的合规的电源线尺寸和插头.使用其它线材或适配器可能会引起故障或火灾。除了Supermicro所指定的产品,电气用品和材料安全法律规定禁止
使用未经UL或CSA认证的线材。(线材上会显示UL/CSA符号)。

警告

安裝此產品時,請使用本身提供的或指定的或採購的連接線,電源線和電源適配器，包含遵照當地法規和安全要求的合規的電源線尺寸和插頭.使用其它線材或適配器可能會引起故障或火災。除了Supermicro所指定的產品,電氣用品和材料安全法律規定禁止
使用未經UL或CSA認證的線材。 (線材上會顯示UL/CSA符號)。

Warnung

Nutzen Sie beim Installieren des Produkts ausschließlich die von uns zur Verfügung gestellten Verbindungskabeln, Stromkabeln und/oder Adapater, die Ihre örtlichen Sicherheitsstandards einhalten. Der Gebrauch von anderen Kabeln und Adapter können Fehlfunktionen oder Feuer verursachen. Die Richtlinien untersagen das Nutzen von UL oder CAS zertifizierten Kabeln (mit UL/CSA gekennzeichnet), an Geräten oder Produkten die nicht mit Supermicro gekennzeichnet sind.

¡Advertencia!

Cuando instale el producto, utilice la conexión provista o designada o procure cables, Cables de alimentación y adaptadores de CA que cumplan con los códigos locales y los requisitos de seguridad, incluyendo el tamaño adecuado del cable y el enchufe. El uso de otros cables y adaptadores podría causar un mal funcionamiento o un incendio. La Ley de Seguridad de Aparatos Eléctricos y de Materiales prohíbe El uso de cables certificados por UL o CSA (que tienen el certificado UL / CSA en el código) para cualquier otros dispositivos eléctricos que los productos designados únicamente por Supermicro.

Attention

Lors de l'installation du produit, utilisez les cables de connection fournis ou désigné ou achetez des cables, cables de puissance et adaptateurs respectant les normes locales et les conditions de securite y compris les tailles de cables et les prises electriques appropries. L'utilisation d'autres cables et adaptateurs peut provoquer un dysfonctionnement ou un incendie. Appareils électroménagers et la Loi sur la Sécurité Matériel interdit l'utilisation de câbles certifies- UL ou CSA (qui ont UL ou CSA indiqué sur le code) pour tous les autres appareils électriques sauf les produits désignés par Supermicro seulement.

AC ימאתמו מיילמשח מילבכ

!הרהזא

ךרוצל ומאתוה וא ושכרנ רשא AC מימאתמו מיקפס ,מילבכב שמתשהל שי ,רצומה תא מיניקתמ רשאכ לכב שומיש . עקתהו לבכה לש הנוכנ הדימ ללוכ ,תוימוקמה תוחיטבה תושירדל ומאתוה רשאו ,הנקתהה למשחה יריש כמב שומישה יקוחל מאתהב .ילמשח רצק וא הלקתל מורגל לולע ,רחא גוסמ מאתמ וא לבכ לש דוק מהילע עיפומ רשאכ) CSA-ב וא UL -ב מיכמסומה מילבכב שמתשהל רוסיא מייק ,תוחיטבה יקוחו .דבלב Supermicro י"ע מאתוה רשא רצומב קר אלא ,רחא ילמשח רצומ לכ רובע UL/CSA)

تركيب المنتج، قم باستخدام التوصيلات المتوفرة أو المحددة أو قم بشراء الكابلات عند الكهربائية وحوالت التيار المتردد مع الالتزام بقوانين ومتطلبات السلامة المحلية بما في ذلك .حجم الموصل والقابس السليم. استخدام أي كابلات وحوالت أخرى قد يتسبب في عطل أو حريق. CSA وأ UL لـ قبل من المعتمدة الكابلات استخدام والمعدات الكهربائية للأجهزة السلامة قانون يحظر .Supermicro لـ قبل من والمحددة المعينة المنتجات غير أخرى معدات أي مع (UL/CSA) السلامة عالم تحمل والتي

전원 케이블 및 AC 어댑터

경고! 제품을 설치할 때 현지 코드 및 적절한 굵기의 코드와 플러그를 포함한 안전 요구 사항을 준수하여 제공되거나 지정된 연결 혹은 구매 케이블, 전원 케이블 및 AC 어댑터를 사용하십시오.

다른 케이블이나 어댑터를 사용하면 오작동이나 화재가 발생할 수 있습니다. 전기 용품 안전법은 UL 또는 CSA 인증 케이블 (코드에 UL / CSA가 표시된 케이블)을 Supermicro 가 지정한 제품 이외의 전기 장치에 사용하는 것을 금지합니다.

Stroomkabel en AC-Adapter

Waarschuwing! Bij het aansluiten van het Product uitsluitend gebruik maken van de geleverde Kabels of een andere geschikte aan te schaffen Aansluitmethode, deze moet altijd voldoen aan de lokale voorschriften en veiligheidsnormen, inclusief de juiste kabeldikte en stekker. Het gebruik van niet geschikte Kabels en/of Adapters kan een storing of brand veroorzaken. Wetgeving voor Elektrische apparatuur en Materiaalveiligheid verbied het gebruik van UL of CSA -gecertificeerde Kabels (met UL/CSA in de code) voor elke andere toepassing dan de door Supermicro hiervoor beoogde Producten.

Appendix C

System Specifications

Processors

Dual Intel 81xx/61xx/51xx/41xx/31xx series

Chipset

Intel C621 PCH

BIOS

32 MB AMI BIOS SPI Flash BIOS

Memory

Supports up to 2 TB of Load Reduced DIMM (LRDIMM), 3D LRDIMM, Non-Volatile DIMM (NV-DIMM) DDR4 (288-pin) modules in 16 slots
Type: 2666/2400/2133 MHz ECC DDR4
DIMM sizes: Up to 256 GB

Drive Bays

Eight 3.5" SATA3 drives, or 2.5" drives with an optional converter kit for each drive (MCP-220-00043-0N)

Input/Output

USB: Two USB 3.0, two USB 2.0
LAN: Two 10 Gb (6029P-TRT) or 1 Gb (6029P-TR); one dedicated IPMI
COM: One external
VGA: One

Motherboard

X11DPi-N(T) (proprietary form factor),
Dimensions: 10.47" (L) x 16.97" (W) (265.94 mm x 431.04 mm)

SATA

Eight SATA 3.0 ports supported by Intel PCH (I-SATA 0-3, I-SATA 4-7)
Four S-SATA 3.0 ports supported by Intel SCU
Two SATA 3.0 ports with power-pins built-in, with support for Supermicro SuperDOM (S-SATA4/S-ISATA5)

Chassis

SC825TS-R1K03LPB; 2U, slide mounting rails
Dimensions: (WxHxD) 16.8 x 3.5 x 25.5 in. (427 x 89 x 648 mm)

Weight

Net Weight: 38 lbs (17.2 kg)
Gross Weight: 63 lbs (28.6 kg)

System Cooling

Three 8-cm 4-pin PWM mid-chassis fans
One CPU air shroud

Expansion Slots

Four PCI Express 3.0 x16 slots
Two PCI Express 3.0 x8 slots

Power Supply

Dual 800/1000 W modules, 80Plus Titanium level
Model: PWS-1K03A-1R
AC Input: 100-240 V, 50-60 Hz
Rated AC Input Current: 800 W Output @ 100-127 V: 9-12 A; 1000 W Output @ 200-240 V: 6-7.2 A
Rated DC Output Power:
  +12 V, for 800 W - 67 A, for 1000 W - 83 A
  +5 V standby - 4 A

Operating Environment

Operating Temperature: 10º to 35º C (50º to 95º F)
Non-operating Temperature: -40º to 70º C (-40º to 158º F)
Operating Relative Humidity: 8% to 90% (non-condensing)
Non-operating Relative Humidity: 5% to 95% (non-condensing)

Regulatory Compliance

Electromagnetic Emissions: FCC Class A, EN 55032 Class A, EN 61000-3-2/3-3, CISPR 22 Class A
Electromagnetic Immunity: EN 55024/CISPR 24, (EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11)
Safety: CSA/EN/IEC/UL 60950-1 Compliant, UL or CSA Listed (USA and Canada), CE Marking (Europe)

Perchlorate Warning

California Best Management Practices Regulations for Perchlorate Materials: This Perchlorate warning applies only to products containing CR (Manganese Dioxide) Lithium coin cells. “Perchlorate Material-special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate”

Appendix D

UEFI BIOS Recovery Instructions

Warning: Do not upgrade the BIOS unless your system has a BIOS-related issue. Flashing the wrong BIOS can cause irreparable damage to the system. In no event shall Supermicro be liable for direct, indirect, special, incidental, or consequential damages arising from a BIOS update. If you need to update the BIOS, do not shut down or reset the system while the BIOS is updating to avoid possible boot failure.

D.1 Overview to UEFI BIOS

The Unified Extensible Firmware Interface (UEFI) specification provides a software-based interface between the operating system and the platform firmware in the pre-boot environment. The UEFI specification supports an architecture-independent mechanism for add-on card initialization to allow the UEFI OS loader, which is stored in the add-on card, to boot up the system. UEFI offers a clean, hands-off control to a computer system at bootup.

D.2 Recovering the UEFI BIOS Image (Main BIOS Block)

A UEFI BIOS flash chip consists of a recovery BIOS block, which is comprised of two boot blocks and a main BIOS block (the main BIOS image). The boot block contains critical BIOS codes including memory detection and recovery codes for the user to flash a new BIOS image if the original main BIOS image is corrupted. When the system power is on, the boot block codes execute first. Then the main BIOS code will continue with system initialization and bootup.

Note: Follow the BIOS recovery instructions below when the main BIOS boot crashes.

D.3 Recovering the UEFI BIOS with a USB Device

This feature allows the user to recover a BIOS image using a USB device without the need of additional utilities. A device such as a USB flash drive or a USB CD/DVD ROM/RW can be used. A USB hard disk drive cannot be used for BIOS recovery at this time.

To perform UEFI BIOS recovery using an attached device, follow the instructions below.

1. Using a different system, copy the "Super.ROM" binary image file into the disc Root "\" directory of a USB device or a writeable CD/DVD.

Note: If you cannot locate the "Super.ROM" file in your driver disk, visit our website at www.supermicro.com to download the BIOS image to a USB flash device and rename it "Super ROM".

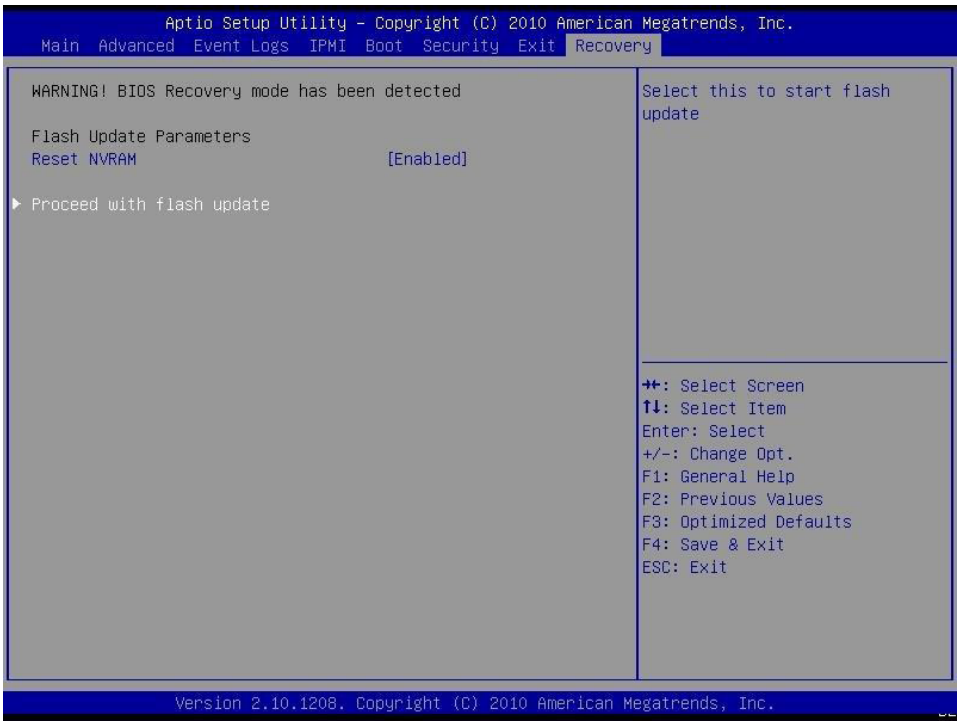
2. Insert the USB device that contains the new BIOS image ("Super.ROM") into your USB drive and power on the system

3. While powering on the system, keep pressing <Ctrl> and <Home> simultaneously on your keyboard until your hear two short beeps. This may take from a few seconds to one minute.

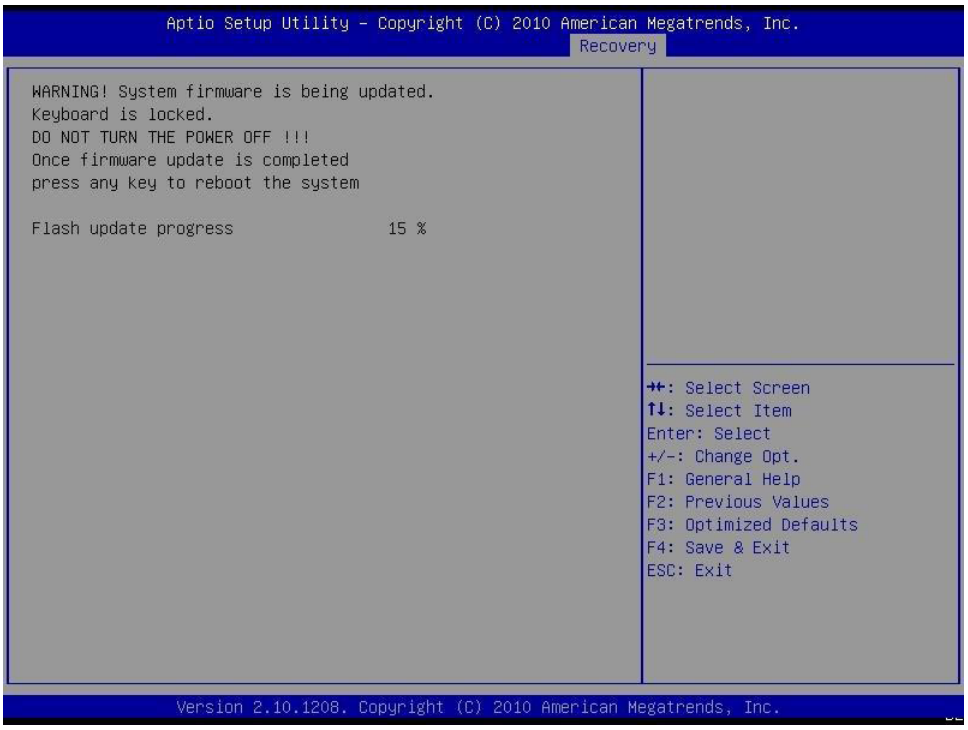
4. After locating the new BIOS binary image, the system will enter the BIOS recovery menu as shown below.

Note: At this point, you may decide if you want to start with BIOS Recovery. If you decide to proceed with BIOS Recovery, follow the procedures below.

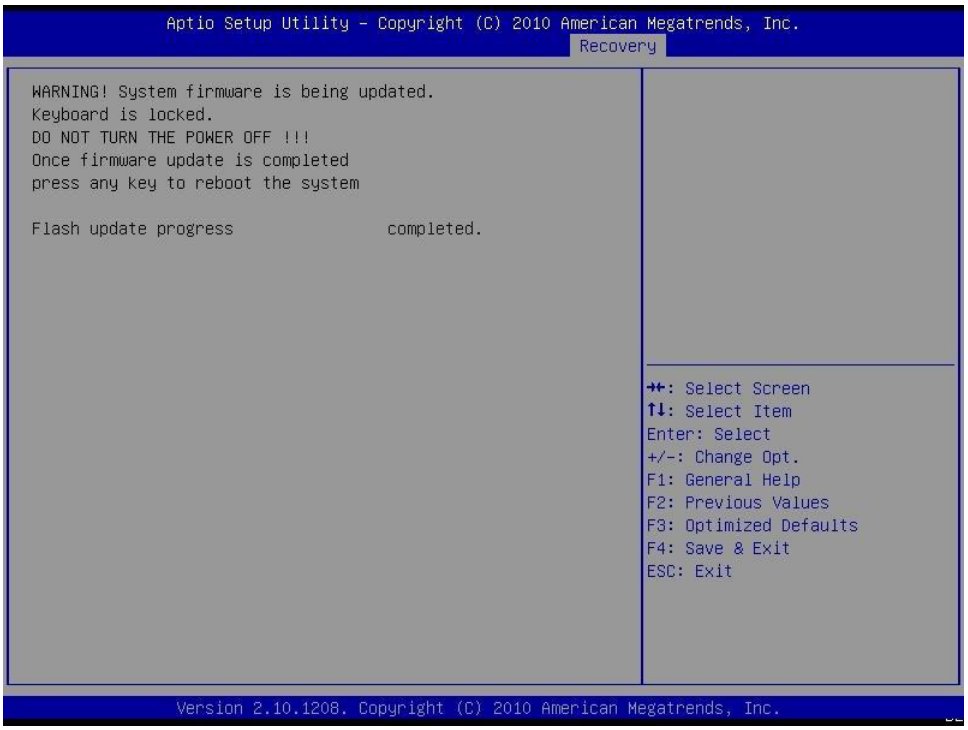
5. When the screen shown above displays, use the arrow keys to select the item "Proceed with flash update" and press the <Enter> key. You will see the BIOS recovery progress as shown in the screen below.



Note: *Do not interrupt* the process of BIOS flashing until it is completed.



6. After the process has completed, press any key to reboot the system.



7. Using a different system, extract the BIOS package into a bootable USB flash drive.

8. When the DOS prompt appears, enter AMI.BAT BIOSname.###.

Note: *Do not interrupt this process* until BIOS flashing has completed.

9. After receiving the message that the BIOS update is complete, unplug the AC power cable from the power supply to clear CMOS, then plug the AC power cable in the power supply again to power on the system.
10. Press <Del> continuously to enter the BIOS Setup utility.
11. Press <F3> to load the default settings.
12. After loading the default settings, press <F4> to save the settings and exit the BIOS Setup utility.